§ 3. It may perhaps be thought that there is some inconsistency in thus claiming the Sotar first as an old course of the Sutlej and then of the Jumna, but this is apparent, not real, for, as I have pointed out, the Sotar takes its rise where the fans of these two rivers meet, and must, as long as they were building up the deposits they are now excavating, have constantly been receiving a supply of water from one or other of the two. It so happens that the last change of course of both rivers, previous to that change of condition which led to their excavating the existing depressed channels, took the one into the Beas, the other into the Ganges, and a dry bed is all that remains of what was once a large river flowing through a fertile land.

Conclusion.—I have now shewn that we may take it as proved that there have been great changes in the hydrography of the Punjab and Sind within the recent period of geology, that there are abundant indications, not amounting to proof, that these changes have taken place within the historic period, and that the most important of them, by which a large tract of once fertile country has been converted into desert, appears to have taken place after several centuries of the Christian era had sped. It is hopeless to expect an authoritative settlement of the question; the physical conditions cannot be said to favour the idea, but they are far from being inconsistent with so recent a drying up of the "Lost River of the Indian Desert."

XIX.—*List of the Lepidopterous Insects collected in Cachar by* Mr. J. Wood-Mason, Part II,—Rhopalocera.—*By* J. Wood-Mason, *Officiating Superintendent of the Indian Museum, and Professor of Comparative Anatomy and Zoology in the Medical College, Calcutta; and* L. de Nice'ville, F. E. S.

[Received and Read November 2nd, 1886.]

(With Plates XV—XVIII.)

Only one short paper on the Rhopalocera of Cachar has hitherto appeared. It is by Mr. A. G. Butler, and it was published in the Transactions of the Entomological Society of London for 1879. In it but 57 species are recorded, of which four are described as new to science, namely, *Salpinx grantii* (which appears to be nothing more than one of the almost innumerable slight variations of *Euplœa klugii*), *Mycalesis lurida* (which is in all probability a seasonal form of *M. perseus* or a form transitional from the one to the other seasonal form of that species), *Lycæna* (*Zizera*) *squalida* (to which the same remark applies, *mutatis mutandis*), and *Neptis cacharica*, which has not since been recognized

by any entomologist, and nothing identifiable with which has been obtained by Mr. Wood-Mason.

From the Independent State of Manipur, which bounds Cachar on the east and is separated therefrom by a range of lofty and precipitous mountains, Mr. Butler has recorded (Ann. & Mag. Nat. Hist., 5th series, vol. xvi, p. 298, 1885) 114 species, many being described as new, and many being from the hills, while all, save a few from Nemotha (a trigonometrical peak 3,634 feet high at the extreme south of the highlands of the district), of those enumerated and described in the following pages were caught in the lowlands of Cachar on either side of a line running nearly directly north and south from the peak just mentioned to Rupacherra close to the Lushai frontier, between 25° 1′ and 24° 24′ north latitude and between 92° 40′ and 92° 52′ east longitude, approximately, chiefly in the forests of Silcuri, Durgakuna, Dhurmkhall, Sildubi, Irangmara, the Doarband-pass, Hasooria or Lalla Mookh, and Rupacherra between the Barak River and the Lushai frontier, and at Dooloo and Subong north of the Barak near the foot of the N. Cachar Hills.

247 species were obtained, affording a good indication of the richness of the region in insect life; but large though this number is—the largest probably that has as yet been published for any portion of India of equal extent—there is little doubt that it might be increased by at least a hundred by an enthusiastic collector stationed in the district for a few years.

The collection, which was formed between March 26th and October 4th, is remarkable for its richness in species of the family *Hesperiidæ;* no less than 53 distinct species of this interesting group having been obtained.

This paper was written in 1881, but its appearance in print has been delayed till now by Mr. Wood-Mason's absence from India on furlough and official engagements and by the preparation of the plates, which have only just been completed.

For an admirable account of the physical features and meteorology of the lovely district of Cachar the reader is referred to the graphic pages of '*A Statistical Account of Assam*' by Sir W. W. Hunter.*

Suborder RHOPALOCERA.

Family **Nymphalidæ.**

Subfamily Danainæ.

1. Danais (*Tirumala*) limniace.

Papilio limniace, Cramer, Pap. Ex., vol. i, pl. lix, figs. D, E, *male* (1775).

Common in Cachar, as elsewhere, in April, May, and June.

* Trübner & Co., London, 1879.

2. Danais (*Tirumala*) septentrionis.

D. septentrionis, Butler, Ent. Month. Mag., vol. xi, p. 163 (1874).

Common in Cachar; specimens also taken on Nemotha Peak at 3,300 feet elevation. This species has a more restricted range than *D. limniace*.

3. Danais (*Limnas*) chrysippus.

Papilio chrysippus, Linnæus, Syst. Nat., ed. x, p. 471, n. 81 (1758).

An ubiquitous insect throughout India.

4. Danais (*Salatura*) genutia.

Papilio genutia, Cramer, Pap. Ex., vol. iii, pl. ccvi, figs. C. D, *male* (1779).

A common species, but less wide-spread than *D. chrysippus*, and occurs with it at all seasons.

5. Danais (*Parantica*) melanoides.

Parantica melanoides, Moore, Proc. Zool. Soc. Lond., 1883, p. 247, n. 1.

Common in Cachar from April to June, and taken on Nemotha in September and October.

6. Danais (*Caduga*) melaneus.

Papilio melaneus, Cramer, Pap. Ex., vol. i, pl. xxx, fig. D (1775).

A single male on Nemotha, 2nd October.

7. Euplœa (*Penoa*) alcathoë.

Danais alcathoe, Godart, Enc. Méth., vol. ix, p. 178, n. 5 (1819).

Common in Cachar in May and June. This species has a restricted range, being confined to Assam and Burma, and giving place in the Malay Peninsula to *E. limborgii*, *E. menetriesii*, and *E. pinwilli*.

8. Euplœa (*Trepsichrois*) linnæi.

Trepsichrois linnœi, Moore, Proc. Zool. Soc. Lond., 1883, p. 286, n. 1, pls. xxix, fig. 4, *female*; xxx, fig. 1, *male*; *Euplœa midamus*, Linnæus, *auctorum*.

Common in Cachar and on Nemotha. Mr. A. G. Butler (Ann. & Mag. Nat. Hist., 5th series, vol. xvi, p. 300, n. 9, 1885), records *Trepsichrois van-deventeri*, Forbes ("Wanderings of a Naturalist," p. 274, 1885, from Cachar (Assam), Malacca, and Sumatra) from "near Assam." We have examined large series of *E. linnœi* from many localities in the wide distributional area of that species, extending from the Kulu valley in the west to Sibsagar in the east of the Himalayan range, through Burma, to the Malay Peninsula, but we have not succeeded in detecting the presence of any differences of greater value than those which are exhibited by the individuals of every animal and vegetable species whatsoever. Even Mr. Moore, who described *E. linnœi*, failed to observe the specific differences that Mr. Forbes has detailed in describing his

species, as he gives all the localities for *E. linnœi* that Mr. Forbes gives for *E. van-deventeri*. The description as a distinct species of a slight variety, if it is even that in this instance, of a well-known, common, and wide-spread species is, in our opinion, very much to be deprecated.

9. Euplœa (*Danisepa*) rhadamanthus.

Papilio radamanthus, Fabricius, Ent. Syst., vol. iii, pt. i, p. 42, n. 127, *male* (1793).

Common in Cachar from April to August. It occurs to the eastwards as far as Nepal at any rate; it is replaced in Burma and to the southwards by the closely allied *E. diocletianus*. The female is much rarer than the male, three specimens only having been obtained; as a rule in this genus the sexes are of about equally common occurrence.

Mr. Wood-Mason notes that "the eversible caudal rosettes of the males are finely vanilla-scented."

10. Euplœa (*Pademma*) klugii.

E. klugii, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 130, n. 258 (1857); and in Anderson's Anat. and Zool. Researches, p. 922 (1878).

Five males 6th and 7th April, five females 5th to 7th April, four males 18th May to 10th June, four females 1st to 21st June, in the station of Silchar and the forests around.

The Indian Museum, Calcutta, also possesses specimens from Sylhet, and others obtained in Burma by the Yunan Expedition, the latter identified by Mr. Moore.

The blue shot in some of the Cachar specimens is very deep and brilliant, and extends in the forewing to the marginal series of dots, in others it is far less deep and vivid (in which cases it is more violet than blue) and less extensive, only reaching to rather less than midway between the end of the cell and the submarginal series of spots; in some specimens, indeed, it is hardly more developed than in examples of *E. kollari*, Felder, from Calcutta, and from them these latter can hardly be distinguished. In some specimens the marginal series of dots on the forewing is complete to the apex, in others it is obsolete towards the apex, and, in two specimens taken in Upper Burma by the Yunan Expedition, it is altogether absent. So with the submarginal series of spots: the full complement is eight, but in some examples this number is reduced to four on the apical half: the spots are also equally variable in shape and colour, some are small and round, others larger and oval, while others again are produced into elongated streaks: sometimes they are almost entirely violet, at others they are white-centred, and at others lastly they are almost entirely white. In some specimens there is no discal series of spots outside the cell, in others there are as many as five, the one in the second median interspace being sometimes obsolete.

In the hindwing, the same inconstancy obtains in the two series of spots on the margin: in some specimens both are as prominent and as complete as in South China specimens of *E. alopia*, Godart, between which condition of completeness and the defect of all but two or three apical spots of the inner series there is every gradation in both sexes. One of the female varieties has been described by Mr. Butler as *E. grantii*,* from Cachar, but, as the above remarks show, *E. klugii* is one of the most variable of butterflies, so much so that some specimens of it are almost if not quite indistinguishable from some specimens of *E. kollari*, while its extremes are so very distinct that the one is brilliantly shot with blue, and the other exhibits only a trace of this interference colour in certain lights. The underside is quite as variable as the upper, and, in a single Upper Burma female, there is a prominent violet-white spot in the discoidal cell of the forewing, visible above and below.

Following the principles of division adopted by Mr. Moore in his "Monograph of *Limnaina* and *Euplœina*,"† we could make almost as many species as there are specimens in it out of our large series captured in Cachar under circumstances that leave no room for doubt that we have to do with a number of individuals of a single variable species. We have, therefore, abandoned the attempt to split up our specimens into the several species discriminated by Mr. Moore in the *Pademma* group.

11. Euplœa (*Pademma*) erichsonii.

E. erichsonii, Felder, Reise Novara, Lep., vol. ii, p. 324, n. 444 (1865); *E. crassa*, Butler, Proc. Zool. Soc. Lond., 1866, p. 278, n. 31.

One female 6th April. This specimen has the submarginal spots on the upperside of the forewing reduced to five large ones at the apex, and the blue gloss confined to the dark base of the wings.

12. Euplœa (*Isamia*) rogenhoferi.

E. rogenhoferi, Felder, Reise Novara, Lep., vol. ii, p. 325, n. 446 (1865); *E. splendens*, Butler, Proc. Zool. Soc. Lond., 1866, p. 272, n. 9.

Three males and a female, from April to June.

13. Euplœa (*Stictoplœa*) binotata.

Stictoplœa binotata, Butler, Journ. Linn. Soc., Zoology, vol. xiv, p. 302, n. 7 (1878).

Two pairs taken in May and June. Mr. Moore (Proc. Zool. Soc. Lond., 1883, pp. 319, 320) records two "new species" of this group from Cachar. From the descriptions they must be very close to *E. binotata*, which itself is probably inseparable from *E. hopei*, Felder.

* Trans. Ent. Soc. Lond., 1879, p. 2. † Proc. Zool. Soc. Lond., 1883, p. 201.

Subfamily Satyrinæ.

14. Anadebis himachala.

Mycalesis? himachala, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 234, n. 503 (1857).

Numerous specimens of both species, May, July, and August. This is a butterfly that occurs only in thick forests, very seldom venturing out into the sun, and even then never far from the shelter of large trees.

15. Mycalesis (*Virapa*) anaxias.

M. anaxias, Hewitson, Ex. Butt, vol. iii, *Mycalesis* pl. iv, figs. 25, 26, *male* (1862).

One male near Silcuri, 9th August, and another on Nemotha, 24th September.

16. Mycalesis (*Orsotricena*) medus.

Papilio medus, Fabricius, Syst. Ent., p. 488, n. 198 (1775).

Numerous specimens of both sexes taken between 26th May and 9th August, that is to say, during the rainy season.

17. Mycalesis (*Orsotricena*) runeka.

M. runeka, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 234, n. 501 (1857).

Four males only from 3rd to 5th April, that is to say, at the end of the dry season. It is almost certainly but a seasonal form of *M. medus*.

18. Mycalesis (*Calysisme*) blasius.

Papilio blasius, Fabricius, Ent. Syst., Suppl., p. 426, n. 488-9 (1798).

Eleven males and a female around Silcuri between 27th May and 28th June.

19. Mycalesis (*Calysisme*) perseus.

Papilio perseus, Fabricius, Syst. Ent., p. 488, n. 199 (1775).

Two males only near Silchar on 3rd April. This is almost certainly but a cold and dry season form of *M. blasius*.*

20. Mycalesis (*Calysisme*) mineus.

Papilio mineus, Linnæus, Syst. Nat., ed. x, p. 471, n. 84 (1758).

Seventy-five males and seventeen females in Silcuri and the forests around between 26th May and 25th August. A single male of the cold

* Since the above was put in type Mr. de Nicéville has proved by breeding that *M. blasius* and *M. perseus* are but seasonal forms of one and the same species.

and dry season form (*M. indistans* and *M. visala*, Moore) was obtained in Silchar on 3rd April. The latter form must swarm in its season just as we have above given evidence that the wet season generation does in its season.

21. Mycalesis (*Pachama*) suaveolens, Pl. XVI, Fig. 1, ♂.

M. suaveolens, W.-M. & de N., in Butt. of India, vol. i, p. 125, n. 103 (1883).

♂. Wings above and below dark sepia, fringed with ashy-white. Upperside. *Forewing* with the costal and outer margins regularly arched; with a narrow and very indistinct light brownish discal band extending, parallel to the outer margin, from the subcostal nervure to the first median nervule; with two velvety-black, white-pupilled ocelli encircled by a slender iris of ochreous-brown of almost the same shade as, but more distinctly expressed than, the discal band; with the first of these ocelli the smaller, triple (having a minute white-pupilled ocellule run together with it at either end), and so placed that its pupil lies in the fold between the discoidal nervules; with the second ocellus much the larger, circular, and placed in the middle of the first median interspace, whence it extends a short distance into the two adjoining interspaces; and with two obsolete anteciliary pale lines. *Hindwing* above with a single perfect and slightly elongated ocellus in the first median interspace, the bounding nervules of which it does not reach; with a minute rudimentary ocellus on the fold of the discoidal interspace on one side only; and with the anteciliary pale lines more distinct than in the forewing. Underside darker and more richly coloured, but not striated; with a narrow cretaceous-white common discal band extending from the subcostal nervure in the forewing to the submedian nervure in the hindwing, where it runs into the inner of the two pale anteciliary lines, which, equally distinct in both wings, are somewhat coarser in the forewing; and with a third pale line following the outer configuration of the ocelli. *Forewing* ocellated as above. *Hindwing* with seven ocelli arranged in two decreasing series, the first of which consists of four slightly decreasing ocelli, and the second, of three more rapidly decreasing ones, of which the first corresponds to the one visible above, but is larger, so extending beyond the limits of its interspace on both sides as to touch the second, which is united to the third or anal. *Antennæ* above concolorous with the wings and body, below lighter and indistinctly annulated, becoming orange towards the black orange-tipped club. *Cilia* ashy-white throughout.

Expanse, ♂, 2·5 inches.

Hab.—Cachar and Sikkim.

A single specimen was taken on Nemotha (T. S.), N. Cachar, at an elevation of 3,300 feet, in September.

Mr. Wood-Mason notes: "The scent-glands and fans, which are much as in *M. malsara*, Moore, emitted a powerful and delicious odour resembling that of vanilla for some hours after the death of the insect."

Nearest allied to *Mycalesis mestra* (Hewitson, Ex. Butt., vol. iii, *Mycalesis* pl. i, figs. 2, 3, *female*, 1862, from Bhutan, Assam, and the Khasi Hills), from the figure of which it differs, above, in having three subapical conjugated ocelli and the discal band less distinct in the forewing, and only one subanal ocellus in the hindwing, instead of two, as in *M. mestra*; and, below, in having the ground unstriated throughout, one posterior ocellus instead of two in the forewing, and an additional ocellus in the middle of the ocellated band in the hindwing.

Mr. Otto Möller has taken a few specimens of this beautiful species in May in Sikkim at about 3,000 feet elevation.

The female is rather larger and paler than the male, but does not differ in markings.

22. Mycalesis (*Kabanda*) malsarida.

M. malsarida, Butler, Cat. Diurn. Lep. B. M., *Satyridæ*, p. 134, n. 27, pl. iii, fig. 14 (1868).

One male on Nemotha, 21st September. It agrees equally well with the description of *M. khasiana*, Moore (Proc. Zool. Soc. Lond., 1874, p. 566, from the Khasia Hills), the only other species in Mr. Moore's genus *Kabanda* (Trans. Ent. Soc. Lond., 1880, p. 168), except that the ocelli on the underside are not "minute." In the original description of *M. khasiana* no reference is made to *M. malsarida*, nor is it possible from the description alone of the former to tell in what, if any, other respects, besides the single character mentioned above, it differs from the latter.

23. Neorina crishna.

Cyllo crishna, Westwood, Gen. Diurn. Lep., vol. ii, p. 361, n. 9, *note*, ♂ (1851).

Seven males, Nemotha, 12th September to 4th October.

24. Lethe europa.

Papilio europa, Fabricius, Syst. Ent., p. 500, n. 247 (1775).

Several specimens around Silchar in the forests, one female on Nemotha.

25. Lethe rohria.

Papilio rohria, Fabricius, Mant. Ins., vol. ii, p. 45, n. 446 (1787).

A few specimens from forests in Silchar in August, two from Nemotha in September.

"The males of this species," Mr. Wood-Mason notes, "emit a delicious vanilla-like scent."

26. Orinoma damaris.

O. damaris, Gray, Lep. Ins. Nepal, p. 14, pl. vii, figs. 2, 2*a* (1846).

One male Nemotha, 4th October.

27. Ypthima philomela.

Papilio philomela, Johanssen, Amœn. Acad., vol. vi, p. 404, n. 60 (1764).

Abundant from April to September, obtained on Nemotha in October. The specimens shew great variation in the size of the ocelli on the underside, and there is often an additional seventh ocellus between, and sometimes confounded with, the two anterior pairs of ocelli on the hindwing. None of them, however, exhibit the markings of the cold and dry season form which Mr. Butler has described under the name of *Y. marshallii*.

28. Ypthima newara.

Yphthima newara, Moore, Proc. Zool. Soc. Lond., 1874, p. 567.

Three males and one female in forests near Silcuri on May 18th, one male on July 28th. Mr. Butler (Ann. & Mag. of Nat. Hist., fifth series, vol. XVI, p. 302, n. 18, 1885) records from Manipur, *Y. narada*, Kollar, a species confined to the N.-W. Himalayas so far as we are aware.

29. Ypthima huebneri.

Y. hübneri, Kirby, Syn. Cat. Diurn. Lep., p. 95, n. 18 (1871).

Some hundreds of specimens were taken exhibiting, as usual, great variation in the ocellated markings; amongst which were a few of the cold and dry season form, *Y. howra*, Moore.

30. Erites falcipennis, Pl. XVI, Fig. 2, ♂.

E. falcipennis, W.-M. & de N., in Butt. of India, vol. i, p. 237, n. 230 (1883).

♂. Nearest allied to *E. angularis*, Moore,* but differs from that species in the UPPERSIDE being dark fuliginous throughout, in the *forewing* being distinctly falcate, and in the ocellus being round and prominently white-pupilled, with a very narrow pale iris. *Hindwing* with the discal fascia and series of blind ocelli hardly defined by

* *Erites angularis*, Moore, Proc. Zool. Soc. Lond., 1878, p. 825, ♂, from Upper Tenasserim; and Distant, Rhop. Malay., p. 46, pl. v, fig. 3, ♂, from Perak.

ochreous, the outer margin less waved, especially at the third median nervule, where in *E. angularis* the wing is produced into a short tail, and the marginal lines obsolete. Underside. All the markings duller and less ochreous. *Forewing* with a small circular central pure white pupil to the posterior ocellus, not a large, nacreous, and eccentric oval one, as in *E. angularis;* and the iris narrow. On the *hindwing* the ocelli are small, the two discal fasciæ wider and deeper ochreous. The striæ on both wings are shorter and more crowded, forming on the *hindwing* a submarginal purplish band.

Expanse : 2·1 to 2·3 inches.

One male in the forests near Silcuri on 6th August, and another male on Nemotha on 25th September.

31. Melanitis leda.

Papilio leda, Linnæus, Syst. Nat., ed. x, p. 474, n. 102 (1758); *P. ismene*, Cramer, Pap. Ex., vol. i, pl. xxvi, figs. A, B (1775); *Melanitis determinata*, Butler, Ent. Month. Mag., vol. xxi, p. 246 (1885).

One male and two females Silchar, 3rd—5th April, and one male Silcuri, 27th May, of the cold and dry season form (true *M. ismene);* nine males and seven females, Silcuri and around, 27th May—9th July, and two males, Subong, 26th and 29th August, of the rains form (*M. leda, auctorum*).

Subfamily Elymniinæ.

32. Elymnias undularis.

Papilio undularis, Drury, Ill. Ex. Ins., vol. ii, pl. x, figs. 1, 2, *male* (1773).

Twenty-seven males and two females were captured in the forests around Silcuri between 14th April and 6th August, most common in June and July.

Mr. Wood-Mason notes that "the males emit a strong odour resembling vanilla, and the females are scentless."

33. Elymnias leucocyma.

Biblis leucocyma, Godart, Enc. Méth., vol. ix, p. 326, n. 3 (1819).

Three males, Silcuri, 21st June—4th July.

34. Dyctis patna.

Melanitis patna, Westwood, Gen. Diurn. Lep., vol. ii, p. 405, n. 6, *note*, pl. lxviii, fig. 2 (1851).

One male on Nemotha, 21st September.

Subfamily Morphinæ.

35. Amathusia portheus.

A. portheus, Felder, Reise Novara, Lep., vol. iii, p. 461, n. 780 (1867).

Two males from the forests around Silcuri, 3rd and 5th August, and one female from Rupacherra in the Hylacandy subdivision, where it was obtained by Mr. Chalmers, by whom it was generously presented to Mr. Wood-Mason. One male forewing was also picked up near Silcuri.

36. Discophora tullia.

Papilio tullia, Cramer, Pap. Ex., vol. i, pl. lxxxi, figs. A, B, *female* (1775).

Thirty-one males and four females in the forests around Silcuri between 11th May and 25th August.

37. Enispe euthymius, Pl. XV, Fig. 1, ♂.

Adolias euthymius, Doubleday, Ann. and Mag. of Nat. Hist., vol. xvi, p. 179 (1845); *Enispe tessellata*, Moore, Proc. Zool. Soc. Lond., 1883, p. 521.

One male, 8th September, on Nemotha, agrees exactly with the description of *E. tessellata* from Nepal and Sikkim. The type specimen of *E. euthymius* was from the Himalaya Mountains, to which locality Sylhet and Assam were added in the 'Genera.' *E. euthymius* is, judging from the specimens in the Indian Museum, Calcutta, an eminently variable species, whose variations are in no way related either to locality or to geographical range, so that even the term 'local race' cannot be applied to the extreme dark form named *E. tessellata* by Mr. Moore, and here figured.

38. Thaumantis diores.

T. diores, Doubleday, Ann. and Mag. of Nat. Hist., vol. xvi, p. 234 (1845).

Two males, 6th September, and one female, 2nd October, on Nemotha.

Mr. Wood-Mason notes that "the scent-fans of the male are vanilla-scented."

39. Stichophthalma camadeva.

Thaumantis camadeva, Westwood, Cab. Or. Ent., p. 9, pl. iv (1848).

Very common in the month of May in the forests near Silcuri (Irangmara), forty males and three females having been taken between the 7th and 20th, on which latter date, as enough females had already been obtained for examination in the fresh state and for the zoological collection, the collector Motiram was told to catch no more specimens. Two more males were, however, subsequently brought in on 6th and 21st July.

"The gland," Mr. Wood-Mason notes, "covered by a patch of modified scales and by an erectile whisp of hairs on each hindwing in the

male, secretes a fluid that gives out a pleasant odour distinct from, but so faint as barely to be perceptible in the presence of, a much stronger odour (resembling that of sable fresh from the furrier's shop) which is common to the two sexes."

Subfamily Nymphalinæ.

40. Ergolis merione.

Papilio merione, Cramer, Pap. Ex., vol. ii, pl. cxliv, figs. G, H (1777).

Numerous specimens of both sexes obtained in the station of Silchar and at, and in the neighbourhood of, Silcuri between 3rd April and 3rd August.

41. Ergolis ariadne.

Papilio ariadne, Linnæus, Syst. Nat., ed. xii, vol. i, pt. 2, p. 778, n. 170 (1767).

Twenty-four males and nine females at, and in the neighbourhood of, Silcuri and at Doloo between 9th June and 26th August.

42. Euripus halitherses.

E. halitherses, Doubleday and Hewitson, Gen. Diurn. Lep., vol. ii, p. 293, n. 1, pl. xli, fig. 2, *male* (1850).

Five males at Doloo, Silcuri, and neighbouring forests, and in Hasooria from 20th May to 25th August.

43. Atella sinha.

Terinos sinha, Kollar, Hügel's Kaschmir, vol. iv, pt. 2, p. 438, n. 1 (1848).

A male and a female in Silcuri, 18th May, two males on Nemotha, 8th and 10th September.

44. Atella phalanta.

Papilio phalanta, Drury, Ill. Ex. Ins., vol. i, pl. xxi, figs. 1, 2 (1770).

One male in the forest near Silcuri on 28th July.

45. Cethosia cyane.

Papilio cyane, Drury, Ill. Ex. Ins., vol. i, pl. iv, fig. 1, *female* (1770).

Fifty-nine males and twenty-four females in the forests near Silcuri between 3rd May and 5th August.

46. Cethosia biblis.

Papilio biblis, Drury, Ill. Ex. Ins., vol. i, pl. iv, fig. 2, *male* (1770).

Three males and three females in forests near Silcuri, 12th May to 28th July, a male and a female on Nemotha, 21st September and 4th October.

47. Cynthia erota.

Papilio erota, Fabricius, Ent. Syst., vol. iii, pt. 1, p. 76, n. 237 (1793).

Twelve males and a female in forests near Silcuri between 10th June and 8th August, two males on Nemotha, 8th and 28th September.

48. Precis iphita.

Papilio iphita, Cramer, Pap. Ex., vol. iii, pl. ccix, figs. C, D (1779).

Twenty-nine males and three females in and around Silcuri, 3rd April to 30th July.

49. Junonia asterie.

Papilio asterie, Linnæus, Syst. Nat., ed. x, p. 472, n. 90 (1758).

Twenty-two males and three females in the forests around Silcuri, and in the station of Silchar, between 9th June and 26th August.

50. Junonia almana.

Papilio almana, Linnæus, Syst. Nat., ed. x, p. 472, n. 89 (1758).

A single male in the forests near Silchar on 3rd April. There is not the smallest doubt that this and the preceding species are seasonal forms of one species; the dates of capture in this instance show this most clearly. We have kept them separate, however, as the fact that they are one species cannot be said to be proved till the one form has been bred from eggs laid by the other.

51. Junonia atlites.

Papilio atlites, Linnæus, Cent. Ins., p. 24, n. 72 (1763).

Ten males and two females in Silcuri and around, 20th May to 20th July.

52. Junonia lemonias.

Papilio lemonias, Linnæus, Syst. Nat., ed. x, p. 473, n. 93 (1758).

Common in Silcuri and neighbourhood.

53. Junonia hierta.

Papilio hierta, Fabricius, Ent. Syst., Suppl., p. 424, n. 281-2 (1798).

One pair, forest near Silchar on 9th June.

54. Junonia orithyia.

Papilio orithya, Linnæus, Syst. Nat., ed. x, p. 473, n. 94 (1758).

A single male in the forests near Silchar on 29th July.

55. Neptis hordonia.

Papilio hordonia, Stoll in Suppl. Cramer, Pap. Ex., vol. v, pl. xxxiii, figs. 4, 4 D (1790).

Thirteen males and four females in forest near Silcuri between 19th May and 8th August.

56. Neptis kuhasa.

N. kuhasa, de Nicéville, Journ. A. S. B., vol. lv, pt. 2, p. 250, n. 2, pl. xi, fig. 12, *male* (1886).

♂. Upperside. *Both wings* black with orange markings. *Forewing* with a broad discoidal streak bounded behind by the median nervure, obscurely separated from the large triangular spot beyond by two fine black lines; a broad subapical patch well-separated from a rather less broad discal one, which reaches the inner margin, and is strongly constricted at the first median nervule; a prominent submarginal somewhat lunate band, with a very obscure and fine pale marginal line. *Hindwing* with a broad straight even discal band, and a similar but narrower (about one-third the width) submarginal band; marginal line as in the forewing. Underside. *Both wings* with the ground-colour much paler, and the bands also paler, ochreous rather than orange. *Forewing* marked as above. *Hindwing* with an additional ochreous band at the base of the costal margin, the discal and submarginal bands broader with the band of the ground-colour between them hence narrower, the outer margin broadly fuscous, bearing a prominent ochreous line. Female, *both wings* slightly paler. *Forewing* with the apex less produced. Upperside. *Hindwing* with the discal band narrower, the submarginal band wider than in the male. Underside with the same differences as the upper.

Expanse: ♂, 1·9; ♀, 2·0 inches.

Differs from Upper Tenasserim specimens of *N. sattanga*, in both sexes, in the submarginal band of the upperside being narrower, the band of the ground-colour between the discal and submarginal ochreous bands on the underside twice as wide, and the outer margin broadly fuscous, bearing a prominent ochreous line, in the hindwing. In *N. sattanga*, the margin is equally broadly ochreous inwardly bounded by a narrow black line, the extreme margin being defined by a very fine black line.

One male on 29th July, and two females on 8th August at Irangmara.

57. Neptis radha.

N. radha, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 166, n. 343, pl. iv*a*, fig. 4 (1857).

One male, Nemotha, 8th September.

58. Neptis harita.

N. harita, Moore, Proc. Zool. Soc. Lond., 1874, p. 571, pl. lxvi, fig. 8.

Three males taken in forests around Silcuri between 13th July and 2nd August. It is decidedly a rare species. Mr. Distant considers *N. harita* to be a variety of *N. vikasi* (Rhop. Malay., p. 444, n. 5*a*, pl. xliii, fig. 8, 1886), and so it may be, but, as it is readily distinguishable, so far as the specimens before us are concerned, we have thought it best to keep it separate from that species.

59. Neptis varmona.

N. varmona, Moore, Proc. Zool. Soc. Lond., 1872, p. 561.

Eighteen males and seven females in forests around Silchar between 3rd April and 14th July, and two males, Dooloo, on 25th August. It is probable that some of the specimens included under this name are really nearer to the next species, for it is by no means easy to draw the line between the two.

60. Neptis kamarupa.

N. kamarupa, Moore, Proc. Zool. Soc. Lond., 1874, p. 570.

Four males, Silchar, from 3rd to 7th April. There is but little doubt that *N. kamarupa* is the cold and dry season form of *N. varmona*, and that many other seasonal forms of the latter widespread, common, and variable species have been described as distinct.

61. Neptis soma.

N. soma, Moore, Proc. Zool. Soc. Lond., 1858, p. 9, n. 17, pl. xlix, fig. 6.

One male on 11th, and one female on 20th July, in forests near Silcuri.

62. Neptis susruta.

N. susruta, Moore, Proc. Zool. Soc. Lond., 1872, p. 563, pl. xxxii, fig. 4.

Five males between 6th April and 28th July, and six females between 3rd April and 4th July, in forests around Silchar.

63. Neptis ophiana.

N. ophiana, Moore, Proc. Zool. Soc. Lond., 1872, p. 561.

One male taken near Silchar on 7th April.

64. Neptis jumbah.

N. jumbah, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 167, n. 345, pl. iv*a*, fig. 5 (1857).

Two males, Silcuri, on 20th June and 2nd July.

65. Cirrhochroa aoris.

Cirrochroa aoris, Doubleday and Hewitson, Gen. Diurn. Lep., vol. i, p. 158, n. 1, pl. xxi, fig. 2, *male* (1848).

One male on Nemotha on 12th September.

66. Cirrhochroa mithila.

Cirrochroa mithila, Moore, Proc. Zool. Soc. Lond., 1872, p. 558.

Twenty-seven males and nine females, Silcuri and neighbouring forests and Rupacherra, between 3rd May and 10th August, also two males on Nemotha, 12th September and 2nd October.

67. Stibochiona nicea.

Adolias nicea, Gray, Lep. Ins. Nepal, p. 13, pl. xii, fig. 1 (1846).

One female, Subong, 26th August.

68. Hypolimnas bolina.

Papilio bolina, Linnæus, Syst. Nat., ed. x, p. 479, n. 124 (1758).

Numerous specimens of both sexes in the station of Silchar, in and around Silcuri, and at Lalla Mookh, between 5th April and 12th August.

69. Penthema lisarda.

Diadema lisarda, Doubleday, Ann. and Mag. of Nat. Hist., vol. xvi, p. 233 (1845).

Thirty-four males and one female in the forests near Silcuri from 11th July to 13th August, and one male at the foot of the North Cachar Hills on 29th August.

70. Parthenos gambrisius.

Papilio gambrisius, Fabricius, Mant. Ins., vol. ii, p. 12, n. 113 (1787).

Nineteen males and seventeen females at and around Silcuri between 3rd May and 8th August.

71. Neurosigma siva.

Adolias siva, Westwood, Gen. Diurn. Lep., vol. ii, p. 291, n. 18 (1850).

Three richly-coloured males on Nemotha, 8th and 10th September.

72. Lebadea ismene.

Limenitis ismene, Doubleday and Hewitson, Gen. Diurn. Lep., vol. ii, p. 276, n. 10, pl. xxxiv, fig. 2 (1850).

Two males on 6th and 21st July, and one female on 10th August, in forest near Silcuri.

73. Limenitis austenia.

Lebadea austenia, Moore, Proc. Zool. Soc. Lond., 1872, p. 560, pl. xxxii, fig. 1.

A pair taken on Nemotha on 12th September.

74. Limenitis daraxa.

L. daraxa, Doubleday and Hewitson, Gen. Diurn. Lep., vol. ii, p. 276, n. 11, pl. xxxiv, fig. 4 (1850).

One male near Silcuri on 28th June, another on Nemotha on 12th September.

75. Limenitis (*Moduza*) procris.

Papilio procris, Cramer, Pap. Ex., vol. ii, pl. cvi, figs. E, F (1777).

Nine males and one female at and around Silcuri between 9th May and 8th August, and a female on Nemotha on 21st September.

76. Athyma perius.

Papilio perius, Linnæus, Syst. Nat., ed. x, p. 471, n. 79 (1758); *A. leucothoë*, Linnæus, *auctorum*.

Twenty-four males and eleven females at Dooloo, Subong, Silcuri and around, and the station of Silchar, between 5th April and 1st September.

77. Athyma asura.

A. asura, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 171, n. 350, pl. v*a*, fig. 1 (1857).

Three males at Irangmara between 18th and 30th July.

78. Athyma pravara.

A. pravara, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 173, n. 354, pl. v*a*, fig. 4 (1857).

Two males at Irangmara on 18th July.

79. Athyma selenophora.

Limenitis selenophora, Kollar, Hügel's Kaschmir, vol. iv, pt. 2, p. 426, n. 1, pl. vii, figs. 1, 2, *male* (1848); *Athyma bahula*, Moore, Proc. Zool. Soc. Lond., 1858, p. 12, n. 3, pl. l, fig. 2, *female*.

Three males from forest near Silcuri, 21st to 25th July. There is not the smallest doubt that the *A. bahula* of Moore is the female of this species. The female of the allied *A. zeroca*, Moore (a male of which from Sikkim is here figured on Pl. XVI, Fig. 6), differs from its male in exactly the same way as does that of *A. selenophora* from its male.

80. Athyma inarina.

A. inarina, Butler, Ann. and Mag. of Nat. Hist., fifth series, vol. xvi, p. 304, n. 37 (1885); *A. inara*, Doubleday and Hewitson, *auctorum*.

Six males and four females at Dooloo and in forest near Silcuri between 9th June and 25th August.

81. Symphædra dirtea.

Papilio dirtea, Fabricius, Ent. Syst., vol. iii, pt. 1, p. 59, n. 184 (1793).

Nineteen males between 6th July and 13th August, four females, 23rd July to 6th August, in forests around Silcuri; also six males and one female on Nemotha between 10th and 4th October.

82. Symphædra cyanipardus.

S. cyanipardus, Butler, Proc. Zool. Soc. Lond., 1868, p. 613, n. 4.

Two males in forests around Silcuri on 5th and 8th August.

83. Euthalia lepidea.

Adolias lepidea, Butler, Ann. and Mag. of Nat. Hist., fourth series, vol. i, p. 71 (1868).

Very numerous specimens in the forests around Silcuri between 14th April and 13th August.

84. Euthalia telchinia.

Adolias telchinia, Ménétriés, Cat. Mus. Pet., Lep., vol. ii, p. 120, n. 1262, pl. ix, fig. 3, *male* (1857); *A. aphidas*, Hewitsou, Ex. Butt., vol. iii, *Adolias* pl. ii, fig. 8, *female* (1862).

One male on Nemotha, 28th September.

85. Euthalia appiades.

Adolias appiades, Ménétriés, Cat. Mus. Pet., Lep., vol. ii, p. 120, n. 1263, pl. ix, fig. 4, *male* (1857); *A. sedeva*, Moore, Trans. Ent. Soc. Lond., new series, vol. v, p. 68, n. 10, pl. iv, fig. 3, *female* (1859).

As in Sikkim at low elevations, so in Cachar, this is one of the very commonest butterflies, and was met with between 3rd May and 13th August in the forests around Silcuri, both sexes being nearly equally prevalent. The form which Mr. Moore describes and figures as *sedeva* is the one which occurs in Cachar.

86. Euthalia jahnu, Pl. XVI, Fig. 5, ♀.

Adolias jahnu, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 192, n. 387, *female* (1857); *A. sananda*, Moore, Trans. Ent. Soc. Lond., new series, vol. v, p. 76, n. 30, pl. vii, fig. 3, *male* (1859).

Two males, Irangmara, 2nd and 3rd, one female, Irangmara, 13th August, and another, Durgakuna, 28th April. The female of this species* not having been figured from a typical specimen by Mr. Moore, is refigured here.

87. Euthalia kesava.

Adolias kesava, Moore, Trans. Ent. Soc. Lond., new series, vol. v, p. 67, n. 9, pl. iii, fig. 5, *male* and *female* (1859); *Euthalia phemius*, Staudinger, Ex. Schmett., pl. liv, ♀ only (1885).

Two males and two females between 18th July and 10th August in forests around Silcuri.

88. Euthalia garuda.

Adolias garuda, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 186, n. 374, pl. vi, figs. 2, *larva*; 2*a*, *pupa* (1857).

Sixty-two males and twenty females in forests around Silcuri between 29th May and 12th August.

89. Euthalia phemius.

Itanus phemius, Doubleday and Hewitson, Gen. Diurn. Lep., vol. ii, pl. xli, fig. 4, *male* (1850); *Adolias sancara*, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 195, n. 394, *female* (1857); *Euthalia phemius*, Staudinger, Ex. Schmett., pl. liv, ♂ only (1885).

One female, Irangmara, 8th August. Mr. Moore continues to consider *E. phemius* and *E. sancara* as distinct species, though every one we have met who knows these insects in the field unhesitatingly places the two together under the former name as the opposite sexes of one. He admits, however, that the specimens he had described as the opposite sexes of his species were both of the female sex. The two were united as the opposite sexes of one species on structural grounds alone in 1881 by Mr. Wood-Mason, whose conclusion was subsequently confirmed by the field observations of Mr. de Nicéville and others.

90. Euthalia jama, Pl. XVI, Figs. 4, ♂; 3, ♀.

Adolias jama, Felder, Reise Novara, Lep., vol. iii, p. 431, n. 690 (1867).

A single female was obtained on Nemotha on 12th September, and is here figured. At the same time we have figured a male specimen from the Naga Hills in the collection of the Indian Museum, Calcutta. It has nothing whatever to do with either sex of the *Euthalia* described and figured by Mr. Distant under the same name (Rhop. Malay., p. 119, n. 4, pls. xiv, fig. 8, ♂; xv, fig. 4, ♀ (1883).

* *A. jahnu*, Moore, Trans. Ent. Soc. Lond., new series, vol. v, p. 74, n. 24, pl. vii, fig. 1, *female* (1859).

91. Euthalia lubentina.

Papilio lubentina, Cramer, Pap. Ex., vol. ii, pl. clv, figs. C, D, *female* (1777).

One male, Silcuri, 27th June.

92. Euthalia anosia.

Adolias anosia, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 187, n. 376 (1857).

One female at Irangmara on 12th July, another seen, *alis extensis*, on the wall of a room in the bungalow at Lalla Mookh in June, presenting the appearance of a leaf overgrown by a fungus, and one male on Nemotha on 12th September.

93. Pyrameis cardui.

Papilio cardui, Linnæus, Syst. Nat., ed. x, p. 475, n. 107 (1758).

A single male in forest near Silcuri on 19th July.

94. Symbrenthia hippoclus.

Papilio hippoclus, Cramer, Pap. Ex., vol. iii, pl. ccxx, figs. C, D, *male* (1779).

One male, Dooloo, 25th August.

95. Symbrenthia hypselis.

Vanessa hypselis, Godart, Enc. Méth., vol. ix, Suppl., p. 818 (1823).

One male on Nemotha, 28th September.

96. Rhinopalpa fulva.

R. fulva, Felder, Wien. Ent. Monatsch., vol. iv, p. 399, n. 21 (1860).

Nine males in forests near Silcuri from 5th May to 10th August. The inner edge of the black band on the outer margin of the forewing on the upperside is straight in the Cachar specimens; in *R. polynice*, Cramer, it is well-curved. The two species are very doubtfully distinct.

97. Doleschallia polibete.

Papilio polibete, Cramer, Pap. Ex., vol. iii, pl. ccxxxiv, figs. D, E (1779).

Two males and one female near Silcuri, 7th to 22nd June. Seen on the wing frequently at Rupacherra.

98. Charaxes (*Eulepis*) delphis.

C. delphis, Doubleday, Ann. Soc. Ent. France, second series, vol. i, p. 217, pl. vii (1843).

One male near Silcuri on 9th August.

99. Charaxes (*Eulepis*) athamas.

Papilio athamas, Drury, Ill. Ex. Ins., vol. i, p. 5, pl. ii, fig. 4 (1770).

Four males, obtained in forests around Silcuri between 10th June and 13th August.

100. Charaxes (*Eulepis*) arja.

C. arja, Felder, Reise Novara, Lep., vol. iii, p. 438, n. 713 (1867).

One male, Irangmara, 8th August. Four male specimens of what appears to be a variety of *C. arja* were obtained, from 28th to 31st June and on 3rd August, in the forests around Silcuri. They differ from the typical form in always having a single small subapical spot only in the forewing, the discal band narrow (·25 of an inch in width at the inner margin of the forewing), the ground-colour very deep indigo-blue on the upperside, and all the markings richer and darker on the underside.

101. Charaxes fabius.

Papilio fabius, Fabricius, Sp. Ins., vol. ii, p. 12, n. 47 (1781).

Seen in September in Silchar, where it was obtained on a previous occasion by one of the Museum collectors.

102. Charaxes (*Haridra*) marmax.

C. marmax, Westwood, Cab. Or. Ent., p. 43, pl. xxi, *male* and *female* (1848).

Five males in forests in and around Silcuri between 6th June and 29th July.

103. Charaxes (*Haridra*) lunawara.

C. lunawara, Butler, Lep. Ex., p. 99, n. 6, pl. xxxvii, fig. 2, *male* and *female* (1872).

Two males, 6th and 13th July.

104. Charaxes (*Haridra*) corax.

C. corax, Felder, Reise Novara, Lep., vol. iii, p. 444, n. 724 (1867).

Numerous males obtained between 10th June and 10th August, only two of which agree exactly with the description of this species, the rest being transitional to *C. hierax*, Felder.

105. Charaxes (*Haridra*) jalinder.

C. jalinder, Butler, Lep. Ex., p. 98, n. 4, pl. xxxvii, fig. 4, *male* and *female* (1872).

One male, Dhurmkhal, 31st June, and one on Nemotha, 10th September, agree fairly well with Butler's description and figure of this species, though differing *inter se*.

106. Charaxes (*Haridra*) hindia.

C. hindia, Butler, Lep. Ex., p. 99, n. 5, pl. xxxvii, fig. 5, *male* and *female* (1872).

Nine males between 14th June and 20th August in forest around Silcuri. They differ considerably from one another, no two being exactly alike; nor does any one of them agree minutely with Mr. Butler's figure of this species.

Family **Lemoniidæ.**

Subfamily Nemeobiinæ.

107. Zemeros phlegyas.

Papilio flegyas, Cramer, Pap. Ex., vol. iii, pl. cclxxx, figs. E, F (1780).

Fifteen specimens of both sexes obtained in the forests around Silcuri between 20th May and 8th August.

Family **Lycænidæ.**

108. Pathalia ? malaya.

Lycæna malaya, Horsfield, Cat. Lep. E. I. Co., p. 70, n. 4 (1828).

One male, Irangmara, 18th July. This specimen possesses tails, going therefore into Mr. Moore's genus *Pathalia*; and it is entirely black on the upperside. A complete gradation can be made from this black form to one with the white area on the upperside of both wings more extensive than the black ground-colour, which latter form has been described by Mr. Moore as *P. albidisca*. In Mr. Moore's genus *Megisba*, which has no tails, the same variation occurs: *M. thwaitesi* from Ceylon has a small patch of white on the upperside of the forewing only, *M. sikkima* is entirely black, but there are other specimens from Sikkim which have the white area above of greater extent than the black. The type of *M. sikkima* is in the Indian Museum, Calcutta, and has tails; so perhaps Mr. Moore does not consider the presence or absence of the tails to be of generic consequence. He has also named for the Indian Museum, Calcutta, some Andaman specimens of this group with tails "*Megisba thwaitesi*," still further showing that he considers the tails of no importance. In this we quite agree with him, but would carry the matter still further and treat *Pathalia malaya*, *P. albidisca*, *Megisba thwaitesi*, and *M. sikkima* as one variable tailed or tailless species.

109. Curetis ? saronis.

C. saronis, Moore, Proc. Zool. Soc. Lond., 1877, p. 587.

Ten males, 9th June to 13th August, and three females, 30th May to 17th July, in forests around Silcuri. In both sexes, they agree more

closely with the Andaman species *C. saronis* than with any other described species known to us.

110. Cyaniris puspa.

Polyommatus puspa, Horsfield, Cat. Lep. E. I. Co., p. 67, n. 3 (1828).

One female, Silcuri, 31st June, one male, Dhurmkhal, 19th July, and one male, Nemotha, 2nd October.

111. Chilades varunana.

Polyommatus varunana, Moore, Proc. Zool. Soc. Lond., 1865, p. 772, pl. xli, fig. 6.

Three males and two females in and around Silcuri from 25th May to 4th June. *C. laius*, Cramer, is almost certainly the cold and dry season form of this species.

112. Zizera sangra.

Polyommatus sangra, Moore, Proc. Zool. Soc. Lond., 1865, p. 772, pl. xli, fig. 8.

Two males and four females at Dooloo on 25th August. We are quite unable to say how *Z. indica*, Murray, differs from this species.

113. Zizera diluta.

Lycæna diluta, Felder, Reise Novara, Lep., vol. ii, p. 280, n. 353, pl. xxxv, figs. 12, 13, *male* (1865).

Common in and around Silcuri from 28th May to 23rd June.

114. ? Tarucus plinius.

Hesperia plinius, Fabricius, Ent. Syst., vol. iii, pt. 1, p. 284, n. 92 (1793).

One male, Silcuri, 25th June.

115. Castalius elna.

Lycæna elna, Hewitson, Ex. Butt., vol. v, *Lycæna* pl. i, fig. 8 (1876).

Three males, Irangmara, 18th to 28th July.

116. Castalius rosimon.

Papilio rosimon, Fabricius, Syst. Ent., p. 523, n. 341 (1775).

Numerous specimens of both sexes in forests in and around Silcuri, 3rd April to 12th August.

117. Jamides bochus.

Papilio bochus, Cramer, Pap. Ex., vol. iv, pl. cccxci, figs. C, D, *male* (1782).

Many males and females in Silcuri from 27th May to 4th July.

118. Lycænesthes lycænina.

L. lycænina, Felder, Verh. zool.-bot. Gesellsch. Wien, vol. xviii, p. 281 (1868).

Two males, Silcuri, 13th and 30th June, one male, Irangmara, 5th August, three females, Silcuri, 28th May to 22nd June.

119. Lycænesthes bengalensis.

L. bengalensis, Moore, Proc. Zool. Soc. Lond., 1865, p. 773, pl. xli, fig. 9, *male*.

Numerous males in Silcuri and neighbourhood, 25th May to 30th July.

120. Nacaduba ardates.

Lycæna ardates, Moore, Proc. Zool. Soc. Lond., 1874, p. 574, pl. lxvii, fig. 1, *male*.

Many examples of both sexes from Silcuri and around between 26th May and 28th July.

121. Nacaduba ? atrata.

Lycæna atratus, Horsfield, Cat. Lep. E. I. Co., p. 78, n. 13 (1828).

A single pair, Silcuri, 7th June, agree with Horsfield's description of this species from Java, and have been so named by Mr. Moore, to whom the specimens were sent for identification. To this group of the genus belong *N. prominens*, Moore, and *N. plumbeomicans* and its local form *nicobarica*, Wood-Mason and de Nicéville. They all possess *three* catenulated bands on the underside of the forewing.

122. Nacaduba cœlestis, de Nicéville, Pl. XVII, Fig. 11, ♂.

"♂. Upperside, *both wings* shining bluish-purple, the outer margins somewhat widely black. *Hindwing* with a fine white anteciliary line from the anal angle to the first median nervule. Underside, *both wings* dusky. *Forewing* with a subbasal straight fascia from the subcostal nervure to the inner margin darker than the ground-colour, and margined with white; a similar fascia from near the costa to the inner margin enclosing the disco-cellular nervules, and a series of five similar spots forming an outwardly curved band from the costa to the second median nervule; a submarginal series of dusky spots outwardly narrowly and inwardly widely defined with white; an anteciliary fine white line. *Hindwing* with three indistinct basal spots, a subbasal straight band, another across the disc, coalescing with a shorter much curved one beyond, and enclosing a conspicuous small oblong white spot, marginal markings as in forewing, but with a round black spot beyond the origin of the 'tail,' outwardly defined with silvery-blue scales and inwardly

with an orange line, and with a few similar scales towards the anal angle. *Cilia* dusky, as is also the 'tail,' the latter tipped with white."

"Expanse, 1·1 inch."

One male, Silcuri, 28th May, another, Irangmara, 21st July. This very pretty and distinct species occurs also at Jhulaghát, 2,000 feet, in Kumaon (*W. Doherty*), the Khasi Hills (*H. J. Elwes*), Sibsagar (*S. E. Peal*), and one specimen, the type, was obtained by the late Mr. A. R. de Roepstorff at Port Blair in the Andamans. The figure is taken from a rather pale specimen; the bands on the underside being usually much more prominently filled in with dark brown.

123. Nacaduba macrophthalma, Pl. XVII, Fig. 13, ♂.

Lycæna macrophthalma, Felder, Verh. zool.-bot. Gesellsch. Wien, vol. xii, p. 483, n. 115 (1862).

Two males, Silcuri, 29th May and 7th June.

124. Nacaduba ? pavana.

Lycæna pavana, Horsfield, Cat. Lep. Mus. E. I. Co., p. 77, n. 12 (1828).

Six males, Silcuri and neighbouring forests, 10th June to 8th August, and two females, 30th May and 25th July, agree with Horsfield's description of this species from Java.

125. Nacaduba viola, Pl. XVII, Fig. 12, ♂.

Lampides viola, Moore, Ann. and Mag. of Nat. Hist., fourth series, vol. xx, p. 340 (1877).

A single male, Irangmara, 8th July, has been thus identified by Mr. Moore.

126. Catochrysops strabo.

Hesperia strabo, Fabricius, Ent. Syst., vol. iii, pt. 1, p. 287, n. 101 (1793).

A few specimens of both sexes in and around Silcuri from 6th April to 26th August.

127. Polyommatus bœticus.

Papilio bœticus, Linnæus, Syst. Nat., ed. xii, vol. i, pt. 2, p. 789, n. 226 (1767).

One female, Silcuri, 3rd June, one male, Nemotha, 2nd October.

128. Lampides elpis.

Polyommatus elpis, Godart, Enc. Méth., vol. ix, p. 654, n. 125 (1823).

One female, Silcuri, 29th May, another Sildubi, 20th July, two more, Nemotha, 6th September and 2nd October.

129. Catapœcilma elegans, Pl. XV, Fig. 6, ♂.

Hypochrysops elegans, Druce, Proc. Zool. Soc. Lond., 1873, p. 350, n. 1, pl. xxxii, fig. 12.

Three males and one female at Silcuri between 27th May and 9th June.

130. Ilerda epicles.

Polyommatus epicles, Godart, Enc. Méth., vol. ix, p. 646, n. 109 (1823).

Eight specimens in the forests around Silcuri between 21st April and 29th August.

131. Iraota timoleon.

Papilio timoleon, Stoll in Suppl. Cramer, Pap. Ex., pl. xxxii, figs. 4, 4 D, *female* (1790).

One female, Silcuri, 25th May.

132. Chliaria othona.

Hypolycæna othona, Hewitson, Ill. Diurn. Lep., p. 50, n. 7, pl. xxii, figs. 17, 18, *male* (1865); *H. eltola*, idem, id., Suppl., p. 14, n. 21, pl. v, figs. 37, 38, *female* (1869).

One male, Irangmara, 8th August.

133. Hypolycæna erylus.

Polyommatus erylus, Godart, Enc. Méth., vol. ix, p. 633, n. 60 (1823).

Ten males at Silcuri and Irangmara, 31st May to 20th August.

134. Remelana jangala.

Amblypodia jangala, Horsfield, Cat. Lep. E. I. Co., p. 113, n. 44 (1828).

One male, Silcuri, 20th June.

135. Deudorix epijarbas.

Dipsas epijarbas, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 32, n. 40 (1857).

One male, Silcuri, 2nd June, one female, Silcuri, 25th May, and another, Irangmara, 8th August.

136. Deudorix dieneces.

D. dieneces, Hewitson, Ill. Diurn. Lep., Suppl., p. 31, n. 35, pl. v*a*, figs. 65, 67, *male*; 66, *female* (1878).

One male, Silcuri, 21st June.

137. Vadebra petosiris.

Deudorix petosiris, Hewitson, Ill. Diurn. Lep., p. 22, n. 13, pl. ix, figs. 30, 31, *male* (1863).

One male, Silcuri, 15th June.

138. Lehera skinneri, n. sp., Pl. XV, Fig. 3, ♀.

♀. Upperside differs only from the same sex of *L. eryx*, Linnæus, in the anal lobe of the *hindwing* being centred with clear ochreous instead of emerald-green. Underside differs only from that species in having the ground-colour clear ochreous also instead of emerald-green.

Expanse : 1·8 inches.

One female, Irangmara, 21st July.

139. Rapala schistacea.

Deudorix schistacea, Moore, Proc. Zool. Soc. Lond., 1879, n. 140.

Seven males and four females, Silcuri between 27th May and 23rd June.

140. Spindasis himalayanus.

Aphnœus himalayanus, Moore, Journ. A. S. B., vol. liii, pt. 2, p. 26 (1884).

Sixty-six specimens obtained in Silcuri and the neighbouring forests between 27th May and 6th August,—most common in June.

141. Spindasis syama.

Amblypodia syama, Horsfield, Cat. Lep. E. I. Co., p. 107, n. 39 (1828).

Four males and two females in Silcuri and around from 1st to 15th June, one female, Subong, 29th August.

142. Tajuria longinus.

Hesperia longinus, Fabricius, Ent. Syst., Suppl., p. 430 (1798).

One male, Silcuri, 13th June.

143. Cheritra etolus.

Papilio etolus, Fabricius, Mant. Ins., vol. ii, p. 66, n. 620 (1787).

Five males at Irangmara and Durgakuna between 3rd May and 25th July.

144. Cheritra acte.

Myrina acte, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 47, n. 77 (1857).

One female, Irangmara, 21st July.

145. Loxura atymnus.

Papilio atymnus, Cramer, Pap. Ex., vol. iv, pl. cccxxxi, figs. D, E (1780).

Thirty-five examples in and around Silcuri between 7th May and 12th August.

146. Loxura tripunctata.

L. tripunctata, Hewitson, Ill. Diurn. Lep., p. 26, n. 4 (1863).

Three males and one female in Silcuri and surrounding forests 31st May, and 11th to 19th July.

147. Surendra quercetorum.

Amblypodia quercetorum, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 42, n. 63, pl. ia, fig. 7, *male* (1857).

Five males and seven females in forests in and around Silcuri from 29th May to 12th August.

148. Nilasera centaurus.

Papilio centaurus, Fabricius, Syst. Ent., p. 520, n. 329 (1775).

One male, Irangmara, 11th July.

149. Nilasera camdeo.

Amblypodia camdeo, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 41, n. 58, pl. ia, fig. 6, *female* (1857).

Twenty-five specimens of both sexes between 5th April and 10th August in Silcuri and surrounding forests.

150. Satadra bazalus.

Amblypodia bazalus, Hewitson, Cat. *Lycænidæ* B. M., p. 8, n. 38, pl. iv, figs. 37, 38, *female* (1862).

One female, Silcuri, 31st May, another, Dhurmkhal, 14th July.

Family **Papilionidæ**.

Subfamily Pierinæ.

151. Terias harina.

T. harina, Horsfield, Cat. Lep. E. I. Co., p. 137, n. 63 (1829).

One male, Dhurmkhal, 21st May, and another, Irangmara, 8th August.

152. Terias hecabe.

Papilio hecabe, Linnæus, Syst. Nat., ed. x, p. 470, n. 74 (1758).

Nine males and ten females in and around Silcuri from 25th May to 25th August. Under this name are doubtless included many so-called distinct species of this group.

153. Catopsilia catilla.

Papilio catilla, Cramer, Pap. Ex., vol. iii, pl. ccxxix, figs. D, E, *female* (1779).

Six males and eight females in Silcuri and surrounding forests from 30th May to 10th August.

154. Catopsilia crocale.

Papilio crocale, Cramer, Pap. Ex., vol. i, pl. lv, figs. C, D, *female* (1775).

Numerous examples of both sexes in forests in and around Silcuri from May to July, but most common in the former of these two months.

155. Catopsilia gnoma.

Papilio gnoma, Fabricius, Syst. Ent., App., p. 828, n. 152-3 (1775).

Four males, Silchar, 5th to 7th April, one female, 5th April, three females, Silcuri, 7th April to 12th June.

Mr. Wood-Mason noted that the tufts of hair on the wings of the male "smell like jessamine."

156. Catopsilia pyranthe.

Papilio pyranthe, Linnæus, Syst. Nat., ed. x, p. 469, n. 66 (1758).

Four males and four females, Silcuri, 25th May to 16th June.

157. Ixias, sp.

Three males, Irangmara, 11th and 13th July. These specimens agree in the size, in the width of the black border on the upperside of the hindwing, and on the underside with the figure of *I. evippe*, Drury (Ill. Ex. Ins., vol. i, pl. v, fig. 2, *male*, 1770), but differ in the orange patch on the upperside of the forewing being much smaller.

158. Hebomoia glaucippe.

Papilio glaucippe, Linnæus, Syst. Nat., ed. x, p. 469, n. 65 (1758).

Four males and three females in and around Silcuri from 7th April to 22nd July.

159. Catophaga paulina.

Papilio paulina, Cramer, Pap. Ex., vol. ii, pl. cx, figs. E, F, *female* (1777).

Seven males in forests in and around Silcuri from 20th May to 11th July, another male on Nemotha, 2nd October; twelve females, first form, from 30th May to 11th July, three females, second form (apex of forewing and entire hindwing on underside rich ochreous), 13th June to 4th July, around Silcuri.

160. Appias nero.

Papilio nero, Fabricius, Ent. Syst., vol. iii, pt. 1, p. 153, n. 471 (1793).

A single female of this very rare species at Irangmara on 29th July. Mr. Otto Möller has also obtained a single female in Sikkim.

161. Appias hippoides.

A. hippoides, Moore, Trans. Ent. Soc. Lond., 1881, p. 312.

Very numerous specimens of both sexes in forests in and around Silcuri from 6th April to 29th August, also on Nemotha, 10th September.

162. Appias zelmira.

Papilio zelmira, Cramer, Pap. Ex., vol. iv, pl. cccxx, figs. C, D, *female* (1780).

Nearly as common as the preceding in similar localities from 25th May to 22nd July.

163. Hiposcritia indra.

Pieris indra, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 74, n. 143 (1857).

One female, Nemotha, 25th September. This sex is very rare in collections, while the male, having quite different habits, is very common.

164. Huphina nama.

Pieris nama, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 76, n. 148 (1857).

One male, Silcuri, 13th June, and a female on 1st June.

165. Huphina phryne.

Papilio phryne, Fabricius, Syst. Ent., p. 473, n. 131 (1775).

One male, Silcuri, 8th July.

166. Mancipium canidia.

Papilio canidia, Sparrman, Amœn. Acad., vol. vii, p. 504, note *m* (1768).

Five males and one female from 7th April to 9th June in and around Silcuri.

167. Mancipium ajaka.

Pieris ajaka, Moore, Proc. Zool. Soc. Lond., 1865, p. 490, n. 21, pl. xxxi, fig. 16, *female*.

One male, 10th September, on Nemotha.

168. Delias pasithoë.

Papilio pasithoe, Linnæus, Syst. Nat., ed. xii, vol. i, pt. 2, p. 755, n. 53 (1767).

Eighteen males and eleven females in forests around Silcuri from 22nd May to 10th August.

169. Delias descombesi.

Pieris descombesi, Boisduval, Sp. Gén., vol. i, p. 465, n. 38 (1836).

Six males and four females, Silcuri and around, 6th April to 8th August.

170. Delias hierte, var. indica.

Thyca hierte, var. *indica*, Wallace, Trans. Ent. Soc. Lond., third series, vol. p. 351, n. 21 (1867).

Twenty-two males and ten females in forests around Silcuri, 29th May to 5th August.

Mr. Wood-Mason notes that "both sexes have a strong grateful musk odour."

Subfamily **Papilioninæ.**

171. Ornithoptera pompeus.

Papilio pompeus, Cramer, Pap. Ex., vol. i, pl. xxv, fig. A, *female* (1775).

One male, Irangmara, 6th August, one female, Sildubi, 2nd July; another female, Irangmara, 28th July.

172. Ornithoptera rhadamanthus.

O. rhadamanthus, Boisduval, Sp. Gén., vol. i, p. 180, n. 8 (1836).

Two females, Nemotha, 12th and 13th September.

173. Papilio (*Iliades*) androgeus.

P. androgeos, Cramer, Pap. Ex., vol. i, pl. xci, figs. A, B, *male* (1776).

Forty-two males; six females, first form (figured by Distant as the female of *P. mestor*, Hübner), one female, second form (the *P. agenor* of Cramer), eight females, third form (the *P. alcanor* and *P. achates* of Cramer); in forests and gardens in and around Silcuri, Irangmara, the Doarband pass, Hasooria, and Rupacherra; where it was almost always to be seen from 3rd April to 10th August. On one occasion, all four forms were seen on the wing together in a group, having evidently just emerged from the chrysalis state, and a specimen of each was taken.

Mr. Wood-Mason notes that "all the forms of this species are inodorous."

174. Papilio *(Panosmiopsis*, subg. nov.*)* rhetenor.

P. rhetenor, Westwood, Arc. Ent., vol. i, p. 59, pl. xvi, figs. 1, 1*a*, *male* (1842) ; *P. icarius*, id., Cab. Or. Ent., p. 5, pl. ii, *female* (1848).—Wood-Mason, Ann. and Mag. of Nat. Hist., fifth series, vol. ix, pp. 104-5 (1882).

Two females only, Nemotha, 28th September, flying in company with *P. dasarada*, many specimens of which were taken, but only two preserved, the rest having been used for dissection and experiment or been in too bad a state to be worth preservation.

Mr. Wood-Mason notes that they are "scentless."

175. Papilio *(Pangeranopsis*, subg. nov.*)* elephenor.

P. elephenor, Doubleday, Ann. and Mag. of Nat. Hist., vol. xvi, p. 305 (1845).

One male, Dhurmkhal, 5th July, of this rare species, which also occurs at Jorehât, Assam (*J. L. Sherwill*).

176. Papilio *(Panosmia*, subg. nov.*)* dasarada.

P. dasarada, Moore, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 96, n. 195 (1857).—Wood-Mason, Ann. and Mag. of Nat. Hist., fifth series, vol. ix, p. 105 (1882).

Two females, on Nemotha, 21st September and 4th October.

Mr. Wood-Mason notes that they had "the strong scent of caged porcupines with a touch of musk."

177. Papilio (*Panosmia*) nevilli, Pl. XV, Figs. 2, 2 *a*, ♂.

P. nevilli, Wood-Mason, Ann. and Mag. of Nat. Hist., fifth series, vol. ix, p. 105, n. 2 (1882) ; *Papilio*, n. s. ?, Nevill, List Diurn. Lep. Indian Museum, Calcutta, p. 1, n. 7 (1870).

"♂. Posterior wings above with two large pink-white spots, one between the discoidal vein and the second branch of the subcostal, occupying all but the two ends of the space ; the other in the space next in front, smaller and not extending so far towards the base of the space, and with three bright crimson submarginal lunules, two subequal in the interspaces between the branches of the median vein, and the third between the third median veinlet and the discoidal vein, equal to, or slightly greater than, the other two taken together ; below with a small pink-white spot between the first branch of the subcostal and the costal veins, forming with the two visible on both sides of the organs a series of three, all equally distant from the outer margin, the submarginal lunules larger and subequal and much lighter coloured, and with a fourth rather irregularly-shaped crimson spot, subequal to the lunules and divided into two unequal parts by the first median vein, at the end of the basal half of which it is placed, with the tails well developed, but not constricted at base."

"Hab. The vicinity of Silchar, Cachar. The three specimens before me were obtained many years ago by one of the native collectors of the museum, under the late Mr. N. T. Davey, of the Topographical Survey of India."

"Nearly allied to *P. ravana*, Moore, from Kulu, in the north-west Himalayas, but smaller, with the well-developed tails not constricted at the base, and not red-spotted." (*Wood-Mason*, l. c.).

178. Papilio *(Pangerana)* erioleuca.

P. erioleuca, Oberthür, E'tudes d'Ent., vol. iv, p. 33, n. 5, pl. iii, fig. 1, *male* (1879); id., de Nicéville, Journ. A. S. B., vol. lii, pt. 2, p. 98, n. 256, *female* (1883).

One male, Irangmara, 8th August, one female, Nemotha, 10th September.

179. Papilio (*Pangerana*) astorion.

P. astorion, Westwood, Ann. and Mag. of Nat. Hist., vol. ix, p. 37 (1842).

Four males and five females, Irangmara, 11th May to 10th August.

Mr. Wood-Mason notes that "the female emits a strong and disgustingly rank musky odour."

180. Papilio *(Charus)* castor.

P. castor, Westwood, Ann. and Mag. of Nat. Hist., vol. ix, p. 37 (1842).

Seventeen males, Irangmara, 11th July to 8th August.

181. Papilio (*Charus*) helenus.

P. helenus, Linnæus, Syst. Nat., ed. x, p. 459, n. 4 (1758).

Fourteen males and three females, 7th May to 20th August, in the forests around Silcuri.

182. Papilio (*Charus*) chaon.

P. chaon, Westwood, Arc. Ent., vol. ii, p. 97, pl. lxxii, figs. 1, 1*, *male* (1845).

Three males, Irangmara, 25th July to 6th August.

183. Papilio (*Zetides*) agamemnon.

P. agamemnon, Linnæus, Syst. Nat., ed. x, p. 462, n. 21 (1758).

Ten males and three females in forests around Silcuri from 12th May to 5th August.

184. Papilio (*Zetides*) eurypylus.

P. eurypylus, Linnæus, Syst. Nat., ed. x, p. 464, n. 37 (1758).

Eleven males and one female in forests around Silcuri from 6th May to 8th August. The Cachar specimens are a little larger than the

typical figure of this species (Clerk's Icones Ins., vol. ii, pl. xxviii, fig. 2, 1764), and have the discal bluish-green macular band even wider. They agree with *P. mecisteus*, Distant, in the colour and markings of the underside; differing therefrom in being considerably larger, and in having the basal linear spot in the cell continued almost to the inner margin, and the discal band broader, on the upperside of the forewing. They do not agree with the species Mr. Moore has vaguely described from N. E. Bengal under the name of *Zetides acheron* (Ann. and Mag. of Nat. Hist., fifth series, vol. xvi, p. 120 (1885).

185. Papilio (*Dalchina*) sarpedon.

P. sarpedon, Linnæus, Syst. Nat., ed. x, p. 461, n. 14 (1758).

Eight males and two females in Silcuri and surrounding forests from 28th April to 6th August.

186. Papilio (*Paranticopsis*, subg. nov.) macareus.

P. macareus, Godart, Enc. Méth., vol. ix, p. 76, n. 144 (1819).

One male, Rupacherra, presented by Mr. Chalmers.

187. Papilio (*Paranticopsis*) xenocles.

P. xenocles, Doubleday, Gray's Zool. Misc., p. 74 (1842).

One male, Durgakuna, 6th May.

188. Papilio (*Pathysa*) antiphates.

P. antiphates, Cramer, Pap. Ex., vol. i, pl. lxxii, figs. A, B (1775).

Nine males and one female, Silcuri and around, 19th May to 29th July.

189. Papilio (*Laertias*) polytes.

P. polytes, Linnæus, Syst. Nat., ed. x, p. 460, n. 7 (1758).

Thirty-eight males (*P. pammon*, Linnæus), three females, first form like the male, fourteen females, second form (the *P. polytes* of Linnæus), and one female, third form (the *P. romulus* of Cramer), in forests in and around Silchar from 3rd April to 12th August.

190. Papilio (*Menelaides*) aristolochiæ.

P. aristolochiæ, Fabricius, Syst. Ent., p. 443, n. 3 (1775).

Twenty males and four females in and around Silcuri from 11th May to 13th August.

Mr. Wood-Mason notes that "the male emits a strong and slightly pungent odour resembling that of ? Batchelor's Buttons or of the rose with a trace of acetic acid."

191. Papilio (*Menelaides*) doubledayi.

P. doubledayi, Wallace, Trans. Linn. Soc., vol. xxv, p. 42, *note* (1865); id., Butler, Trans. Ent. Soc. Lond., 1879, p. 2.

Five males, Silcuri, Irangmara, and Doarband, 8th May to 28th July. Our specimens agree except in size (being as large as Butler's smallest specimen of *P. doubledayi*) with the *P. cacharensis* of Butler, which is described from "near Assam," the country given by Wallace as one of the habitats of his species. Our series of specimens from Burma (Maulmein), the other habitat given by Wallace for his species, present great variation in the size of the white spots in the hindwing, the chief character on which Mr. Butler appears to have relied in separating his species.

Mr. Wood-Mason notes that this species has a "musk-scented body."

192. Papilio (*Orpheides*) erithonius.

P. erithonius, Cramer, Pap. Ex., vol. iii, pl. ccxxxii, figs. A, B (1779).

Five males and one female, Silcuri and neighbourhood, 3rd April to 12th August.

193. Papilio (*Harimala*) paris.

P. paris, Linnæus, Syst. Nat., ed. x, p. 459, n. 3 (1758); id., Nevill, List Diurn. Lep. Indian Museum, Calcutta, p. 1, n. 17 (1870).

Two small males obtained many years back by one of the museum collectors.

194. Leptocircus curius.

Papilio curius, Fabricius, Mant. Ins., vol. ii, p. 9, n. 71 (1787).

Eighteen males in the Irangmara and Silcuri forests from 23rd May to 10th August.

Family **Hesperiidæ.**

195. Badamia exclamationis.

Papilio exclamationis, Fabricius, Syst. Ent., p. 530, n. 373 (1775).

Ten specimens, Silcuri and Dooloo, from 25th May to 25th August.

196. Ismene œdipodea.

I. œdipodea, Swainson, Zool. Ills., vol. i, pl. xvi, *male*, *female*, *larva* and *pupa* (1820—1821).

Two males and two females, Irangmara and Silcuri, 20th May and 8th and 18th July.

197. Ismene jaina.

I. jaina, Moore, Proc. Zool. Soc. Lond., 1865, p. 782.

Two males, Nemotha, 12th September and 4th October.

198. Ismene mahintha.

I. mahintha, Moore, Proc. Zool. Soc. Lond., 1874, p. 575, pl. lxvii, fig. 4, *male*.

One female, Silcuri, 7th June. Hitherto known from Burmah only.

199. Choaspes benjaminii.

Thymele benjaminii, Guérin, Delessert's Souv. Voy. dans l'Inde, vol. ii, p. 79, pl. xxii, figs. 2, 2*a* (1843).

One male, Irangmara, 10th August.

200. Hasora badra.

Goniloba badra, Moore, Proc. Zool. Soc. Lond., 1865, p. 778.

Ten males and eight females in forests around Silcuri, 30th May to 27th August.

201. Hasora coulteri, n. sp., Pl. XVIII, Figs. 8, ♂ ; 8 *a*, 8 *b*, ♀.

♂. Upperside, *both wings* dark bronzy brown, paler at the base owing to the presence of a thick clothing of paler olivaceous-brown setæ ; costal margin of the forewing and the veins and outer margins of both wings darker and faintly glossed with purple ; and with the *cilia* smoky brown. *Forewing* without spots, but with three ill-defined discal bands composed of modified scales arranged along each side of the submedian nervure and of the first and second median nervules, and probably concealed by setæ in the living insect. Underside, *forewing* strongly glossed with purple at the apex, and with a brownish ashy lustrous patch, extending nearly to the outer margin, divided by the submedian nervure, and slightly diffused over the disc. *Hindwing* crossed by a pearly-white slightly outwardly concave prominent discal band, which extends from the costal to the submedian nervure, where it is slightly recurved, is broadest in the middle of its length, narrowest at its posterior or inner extremity, and reappears close to the abdominal margin as a clump of white scales divided by the internal nervure ; the wing suffused with purple beyond the white band, especially on the dark anal blotch, in front of which there extends nearly as far as the third median nervule a distinct whity-brown anteciliary line.

♀. Upperside, *both wings* darker and more richly coloured than in the male, being very conspicuously glossed with purple beyond the lighter basal portions. *Forewing* with three golden-yellow semi-transparent lustrous spots, two discal, situated and shaped much as in *Parata chromus*, Cramer, and one minute and subapical one at the junction of the first and second thirds of the length of the last subcostal cell, sometimes with two spots one above the other, the upper the smaller, and placed in the interspace next above. Underside, *forewing* marked as above, with the inner margin ashy-white, and with a patch of ashy scales in the interno-median area at the level of the discal spots. *Hindwing* with the band broader than in the male and extending to the costal margin. In one of the specimens of this sex the upperside has a mottled appearance owing to the purple gloss being imperfectly developed, as in so many *Euplœas*. *Head* and *thorax* covered with iridescent olive-green pubescence nearly concolorous with that of the wings; abdominal segments of the *body* above and below edged posteriorly with yellowish inclining to orange above; *eyes* encircled with whity-brown scales; *palpi* clothed with mixed brown and yellowish scales.

Expanse: 2·1 inches.

Four males and two females, Silcuri and neighbouring forests, June 1st to July 25th.

202. Bibasis sena.

Goniloba sena, Moore, Proc. Zool. Soc. Lond., 1865, p. 778.

Six examples in and around Silcuri, from 16th June to 5th August.

203. Baracus septentrionum, n. sp., Pl. XVIII, Figs. 4, 4*a*, ♂.

♂. Upperside, *both wings* very dark vandyke-brown with golden, and in certain lights, greenish reflections. *Forewing* with an oblique subcostal streak, another shorter one below this in the cell, two subapical small spots separated from one another by the penultimate subcostal branch, and an indistinct spot on the disc between the second and third median nervules, opaque ochreous-brown. Underside, *forewing* greenish-black, increasingly bordered in front from the base to the apical angle and thence decreasingly to the inner angle with ochreous-brown, varied by light streaks on the folds and by the two subapical spots of the upperside. *Hindwing* throughout ochreous-brown similarly varied with lighter streaks. *Cilia* smoky-brown in the forewing, paler on the hindwing.

Expanse, 1·5 inches.

One male, Irangmara, 8th July, another very old specimen, also from Cachar, in the collection of the Indian Museum, Calcutta, and a

third taken in the Sikkim Tarai by Mr. Otto Möller on 14th September, 1881.

B. septentrionum is nearly allied to *B. subditus*, Moore (Proc. Zool. Soc. Lond., 1883, p. 534), but it differs therefrom in its considerably larger size, in the spots on the upperside of the forewing being of a brighter ochreous, in the shade of the ochreous of the underside generally, and in lacking the conspicuously broad very pale yellow discal streak which extends from the base to near the outer margin of the hindwing and forms so marked a feature both in *B. subditus* from the Nilgiri and Pulni Hills and in *B. vittatus* (Felder) from Ceylon.

204. Astictopterus subfasciatus, Pl. XVIII, Figs. 1, 1*a*, ♂.

A. subfasciatus, Moore, Proc. Zool. Soc. Lond., 1878, p. 842.

A male and a female from forest near Silcuri, 6th June and 20th July. The male of this species has a curious impressed elongated oval brand on the forewing, placed so immediately behind as to touch the median nervure, and extending for one-third of its length along the first median nervule. This species probably has no real connection with the genus *Astictopterus*.

205. Astictopterus butleri.

♂. Closely allied to *A. xanites*, Butler, from the Malay Peninsula, Java, and Borneo. Upperside, *both wings* dark fuliginous-brown, strongly suffused with purple and glossed with dark bronzy-brown according to the play of light. *Forewing* entirely lacking the broad orange band so conspicuous in *A. xanites*. Underside, *forewing* paler and less strongly suffused with purple, paling from the middle of the interno-median area to the posterior margin. *Hindwing* plum-coloured, with the anterior margin fringed at the base with black bristles forming a tuft, which is lodged in, and nipped by the lips of, an elongated sac-like fold in the cell of the forewing.

♀. Larger than the male. Upperside, *forewing* with an obsolete oblique discal red band, which is sometimes quite absent, but distinct traces of which are always to be seen on the underside, which is rather lighter everywhere and less strongly suffused with purple than in the male. The *hindwing* of course lacks the tuft of black bristles present in the opposite sex.

Expanse: ♂, 1·5; ♀, 1·7 inches.

Three males and four females in forest near Silcuri, 8th to 19th July.

A preliminary notice and figure of this species appeared in Journ. A. S. B., vol. lii, pt. 2, p. 98, n. 260, pl. x, fig. 3, ♂ (1883). It is by

no means an uncommon species at low elevations in Sikkim and Bhutan, and it has also been obtained in the Mergui Archipelago.

206. Astictopterus olivascens, Pl. XVIII, Figs. 2, 2*a*, ♀.

A. olivascens, Moore, Proc. Zool. Soc. Lond., 1878, p. 692.

Three males and two females from forest near Silcuri, 11th to 29th July.

207. Astictopterus salsala.

Nisoniades salsala, Moore, Proc. Zool. Soc. Lond., 1865, p. 786.

Thirty-five examples of both sexes in forests in and around Silcuri from 25th May to 6th August.

208. Kerana diocles.

Nisoniades diocles, Moore, Proc. Zool. Soc. Lond., 1865, p. 787.

Thirteen males and two females in Silcuri and surrounding forests, 20th June to 12th August.

209. Matapa aria.

Ismene aria, Moore, Proc. Zool. Soc. Lond., 1865, p. 784.

Twenty-four males and females, 25th May to 8th August, in and around Silcuri.

210. Gangara thyrsis.

Papilio thyrsis, Fabricius, Syst. Ent., p. 532, n. 383 (1775).

Two males and one female, Silcuri and around, 1st and 23rd June and 12th August.

211. Baoris oceia.

Hesperia oceia, Hewitson, Desc. *Hesp.*, p. 31, n. 22 (1868).

Twenty-eight examples of both sexes in forests around Silcuri, 25th May to 22nd June. Messrs. Moore and Distant have both described species under the name of *Baoris unicolor*: Mr. Moore's species is considered by us to be conspecific with the *B. oceia* of Hewitson; Mr. Distant's species not possessing the tuft of hairs on the hindwing in the male, and hence probably belonging to another genus from our point of view.

212. Parnara narooa.

Hesperia narooa, Moore, Proc. Zool. Soc. Lond., 1878, p. 687, pl. xlv, fig. 4.

Seven males and four females in and around Silcuri, 26th May to 21st June.

213. Parnara austeni.

Baoris austeni, Moore, Proc. Zool. Soc. Lond., 1883, p. 533.

Eight males and two females, Silcuri and around, 1st June to 8th August, one of which has been identified by Mr. Moore.

214. Parnara ornata, Pl. XVIII, Figs. 7, 7*a*, ♂.

Hesperia ornata, Felder, Reise Novara, Lep., vol. iii, p. 515, n. 900, pl. lxxii, fig. 6 (1867).

One male, Doarband, 23rd May, appears to agree with Felder's figure and description of this species from Java.

215. Parnara assamensis.

Pl. XVIII, Figs. 5, 5*a*, ♂; Pl. XVII, Figs. 7, 7*a*, ♀.

♂, ♀. Upperside, *both wings* rich dark vandyke-brown prominently marked with semi-transparent white lustrous spots, with the base of the interno-median and the basal three-fourths of the inner margin of the forewing, and the posterior or inner half of the hindwing from the base nearly to the outer margin along the veins, clothed with olive-brown setæ. *Forewing* with ten spots in the male and eleven in the female, *viz.*,—two oblong at the end of the cell, disjunct in the male, but connected at their inner and opposite ends in the female, three subapical, and five discal in the male, but six in the female, forming an oblique series extending from the submedian nervure to the hinder discoidal nervule in the male, but to the subcostal (or front discoidal) in the female; of which spots the first is subtriangular, touches the submedian nervure, and is subequal to the fourth; the second, in the same interspace with the first, is equal to the first subapical, and lies close to, but does not touch, the first median nervule; the third, the largest of all, is equal to, or rather larger than, the first and fourth put together, and acute-angled at its outer end; the fourth is rhomboidal; the fifth rather larger than the second; and the sixth, present in the female only, is shaped somewhat like one of the strokes of a section-sign (§). *Hindwing* with a small oval discal spot sometimes accompanied by a very minute dot in front of the third median nervule. Underside, *forewing* marked as above, but with the hindermost spot touching the submedian nervure outwardly diffused. *Hindwing* covered with

minute olive-brown scales, and lighter internal to a straight line drawn obliquely across the interno-median area from the apex of the third median nervule to the base of the submedian nervure, with a prominent white lustrous dot near the anterior end of the cell and a curved discal series of four white lustrous spots, of which the third from the inner margin is by far the largest, transparent, visible on the upperside, and may or may not be accompanied by a minute dot, which may or may not be transparent and visible from above. *Body* clothed above with olive-green scales and setæ, lighter below. *Palpi* mixed luteous and olive-green. *Antennæ* black, broadly half-ringed below before the club with white, with their taper tips ashy.

Expanse : ♂, 2·2 ; ♀, 2·3 to 2·4 inches.

One male in forest near Silcuri on 11th July, from which the figure is taken. It occurs also in Sibsagar (*S. E. Peal*), at Shillong, and in Sikkim, where it is quite a common species at low elevations ; the figure of the female has been taken from a Shillong specimen. A preliminary description of this species appeared in the Journ. A. S. B., vol. li, pt. 2, p. 65, n. 202 (1882). *P. assamensis* is the largest species of the genus known to us.

216. Parnara bada.

Hesperia bada, Moore, Proc. Zool. Soc. Lond., 1878, p. 688.

Seven males and eleven females in and around Silcuri from 25th May to 5th August.

217. Parnara colaca.

Hesperia colaca, Moore, Proc. Zool. Soc. Lond., 1877, p. 594, pl. lviii, fig. 7.

Many examples of both sexes in and around Silcuri from 30th May to 13th June, which agree with specimens from the Andamans of this somewhat variable species.

218. Parnara toona.

Hesperia toona, Moore, Proc. Zool. Soc. Lond., 1878, p. 689.

One hundred and twenty specimens at and around Silcuri from 25th May to 12th August.

♀ (Hitherto undescribed). Rather larger and less richly-coloured than the male, with the large discal semi-transparent lustrous spot in the first median interspace of the forewing shorter, emarginate, and not extending to the base of the interspace. One example has only the three posterior of the spots of the underside of the hindwing—and

those much reduced in size—instead of five, but four are visible on the upperside.

219. Parnara eltola, Pl. XVIII, Figs. 6, 6*a*, ♂.

Hesperia eltola, Hewitson, Ex. Butt., vol. iv, *Hesperia* pl. iv, fig. 40 (1869).

One male, Nemotha, 25th September.

220. Chapra subochracea.

Pamphila subochracea, Moore, Proc. Zool. Soc. Lond., 1878, p. 691.

One female, Silcuri, 8th June.

221. Chapra agna.

Hesperia agna, Moore, Proc. Zool. Soc. Lond., 1865, p. 791.

Five males and three females in and around Silcuri, 28th May to 25th June.

222. Chapra mathias.

Hesperia mathias, Fabricius, Ent. Syst., Suppl., p. 433, n. 289-90 (1798).

One male and three females in and around Silcuri, 28th May to 9th June. The specific distinctness of this and the two preceding species is in our opinion extremely doubtful.

223. Telicota bambusæ.

Pamphila bambusæ, Moore, Proc. Zool. Soc. Lond., 1878, p. 691, pl. xlv, figs. 11, *male*; 12, *female*.

Over one hundred examples of both sexes taken throughout the season.

224. Telicota augias, Pl. XVII, Fig. 1, ♂.

Papilio augias, Linnæus, Syst. Nat., ed. xii, vol. i, pt. 2, p. 794, n. 257 (1767).

One male, Silcuri, 30st June, two females, Silcuri, 3rd and 21st June. This species may be known from the preceding much commoner one by the golden colouration of the upperside of the forewing extending along the veins to the outer margin, and being throughout paler.

225. Padraona palmarum.

Pamphila palmarum, Moore, Proc. Zool. Soc. Lond., 1878, p. 690, pl. xlv, figs. 6, *male*; 7, *female*.

Five males and four females in Silcuri and surrounding forests, 28th April to 22nd June.

226. Padraona gola.

Pamphila gola, Moore, Proc. Zool. Soc. Lond., 1877, p. 594, pl. lviii, fig. 9, *male*.

Thirty-seven examples of both sexes in and around Silcuri between 25th May and 5th August.

227. Padraona ? dara.

Hesperia dara, Kollar, in Hügel's Kaschmir, vol. iv, pt. 2, p. 455, n. 4 (1848).

Five males and four females, Silcuri from 25th May to 3rd June.

228. Padraona, sp.

Three females, 29th and 31st May and 1st June at Silcuri. One of these specimens was sent for identification to Mr. Moore, who returned it labelled "? *P. mœsa*," a species already (P. Z. S. 1882, p. 262) sunk by himself as a synonym of *P. dara*. Our specimens differ from the same sex of the latter species, as identified by us, in having all the markings considerably larger, clearer, and of a paler shade of golden, differing in these respects also from Mr. Moore's figure of his *P. mœsa* (P. Z. S. 1865, p. 509, n. 118, pl. xxx, fig. 9).

229. Ampittia maro.

Hesperia maro, Fabricius, Ent. Syst., Suppl., p. 432, n. 242-3 (1798).

Seven males, Silcuri and around from 15th June to 10th August.

230. Taractrocera mævius, Pl. XVII, Fig. 2, ♀.

Hesperia mœvius, Fabricius, Ent. Syst., vol. iii, pt. 1, p. 352, n. 338 (1793).

Thirteen examples of both sexes, Silcuri, 29th May to 17th June. It is not known by us how *T. sagara*, Moore (Proc. Zool. Soc. Lond., 1865, p. 792) differs from this species. No mention of *T. mœvius* is made by Mr. Moore in describing *T. sagara*.

231. Halpe sikkima, Pl. XVII, Fig. 8, ♂.

H. sikkima, Moore, Proc. Zool. Soc. Lond., 1882, p. 407.

Three males, Irangmara and Dhurmkhal, 9th and 10th August.

232. Isoteinon microstictum, n. sp., Pl. XVII, Figs. 3, ♂; 3*a*, ♀.

♂. Upperside, *both wings* dark vandyke-brown, suffused with purple, especially on the costal and outer margins and the veins; the *cilia* ochreous-grey. *Forewing* with five small semi-transparent white lustrous spots, two (the first of which is very minute) before the apex, and three discal, one geminated in the cell consisting of an anterior outwardly-

convex thin crescentic and a posterior triangular portion, another about the same size behind and a little external to this between the first and second median nervules subcrescentic in shape with its convexity turned towards the base, and a third squarish external to and in front of, and rather less than half the size of, this again between the second and third median nervules. Underside, *forewing* lighter than above, the translucent spots as on the upperside; with an indistinct submarginal band of spots darker than the ground; a dark anteciliary line; the *cilia* obsoletely intersected at the veins with dark; and an indistinct whity-brown spot touching the first median nervule and the satiny patch extending from the base nearly to the outer angle and from the interno-median fold to the inner margin of the wing, which bears a conspicuous fringe of slate-grey setæ in part projecting straight backwards and outwards from the edge and in part turned up so as to lie spread out fan-wise over the satiny-ashy patch. *Hindwing* darker and more suffused with purple than the forewing, with a dark anteciliary line, but even less distinctly intersected *cilia;* with some dark mottling indistinctly arranged in three bands, one subbasal and two closer together discal or submarginal, and with an indistinct dot between the costal and subcostal nervures, another near the end of the cell, on one side only in one specimen and on both sides in the other, a third between the second and third median nervules in one specimen, and a fourth between the first and second in the other, all ochreous-white.

♀. Upperside, *both wings* much lighter than in the male. *Forewing* with the spots much larger and more numerous, there being an additional subapical one, a very minute dot just in front of the third median nervule, both semi-transparent, and a third opaque yellow one (present in one male) touching the submedian nervure in front, and the third discal spot being quadrate with the inner and outer ends roundly emarginate. Underside, *both wings* with the dark markings more distinct than in the male. *Forewing* devoid of the ashy patch and fringe of setæ seen in the opposite sex. *Hindwing* with two dots behind the costal nervure instead of one, one in the cell, and another between the second and third median nervules on one side only so minute as to be scarcely discernible.

Expanse: ♂, 1·4; ♀, 1·5 inches.

Allied to *I. flavipennis*, de Nicéville (Journ. A. S. B., vol. liv, pt. 2, p. 122, pl. ii, fig. 4, ♀ (1885), but differs in markings, and notably in the colour of the ground of the underside, which is pale vandyke-brown in *I. microstictum* and ferruginous-ochreous in *I. flavipennis*.

Two males, Silcuri, 25th and 26th May, one female, Silcuri, 28th May.

PITHAURIOPSIS, gen. nov.

MALE.—Closely allied to *Pithauria*, Moore, but differing, in the *forewing*, in the distance between the origins of the second and third median nervules being greater, instead of less, than that between those of the first and second, in the submedian nervure being strongly sinuated where it comes into relation with, and the internal area expanded opposite to, a prominent bilobed discal glandular organ, extending from the root of the first median nervule for a short distance into the internal area, and consisting of two unequal slight depressions of the wing-membrane, separated from one another by the interno-median fold, and converted by over-arching stiff modified scales into pouches, which are filled with a soft and fine and adhesive brown woolly substance: and, in the *hindwing*, in the first subcostal nervule being at its origin strongly arched towards the costal, and the base of the second slightly bowed into the cell and more acutely angled at its junction with the disco-cellular nervule, in the subcostal, in fact, with its branches having the shape rather of a tuning-fork than of the letter Y; discoidal nervule absent, and only one disco-cellular consequently present, as in *Pithauria*.

The male genital somites and appendages, though at first sight appearing very different, yet when carefully examined are seen to be built on the same plan and to differ in characters of specific value only from those of *Pithauria*.

FEMALE unknown.

233. PITHAURIOPSIS AITCHISONI, n. sp., Pl. XV, Fig. 4, ♂.

♂. UPPERSIDE, *both wings* rich bronzy-brown. *Forewing* with a basal streak on the costa, another in the cell, one in the submedian, and a fourth, the longest of all, filling the interno-median interspace, all composed of long yellowish-olivaceous hair-like scales; two oblong spots placed obliquely at the end of the cell, the anterior one the further from the base of the wing; two subcostal spots, the anterior one a mere dot; an oval or heart-shaped spot in the second median interspace; and a romboidal one in the space behind; all semi-transparent ochreous. *Hindwing* with all but the costal and outer margins clothed with very long yellowish olivaceous hairs. UNDERSIDE, *forewing* blackish, with the costal and apical half of the wing yellowish-brown. The spots as above save that those in the cell are conjoined into an ill-shaped figure of 8, and that there is a submarginal series of yellowish dots from the first median nervule to the costa. *Hindwing* with a minute yellow spot in the subcostal interspace, two larger ones (the anterior the larger) in the median interspaces, a submarginal series of small obscure yellowish spots, the two of which in the submedian interspace are large and prominent, and a yellow streak on the abdominal

margin. *Cilia* cinereous on the hindwing and at the anal angle of the forewing, in front of which point they are dark brown.

Expanse: 1·8 inches.

Two males, Irangmara, 6th and 29th July. This species agrees in markings almost exactly with the male of *Pithauria murdava*, Moore, but the large and curiously-formed sexual brand in the male will at once distinguish it.

234. Pithauria stramineipennis, n. sp., Pl. XV, Fig. 5, ♂.

♂. Upperside, *both wings* marked precisely as in *P. murdava*, Moore, but all the setæ on the base of the wings clear whity-brown with a touch of yellow on all those in front of the submedian nervure of the forewing, those on the interno-median area of this wing being concolorous with the whity-brown down of the hindwing, the costal area of which is above more or less extensively pale brown. In *P. murdava*, the setæ in the hindwing are yellowish-olivaceous, all those of the forewing distinctly yellower; and the costal area of the hindwing is dark. All the spots and streaks of both sides are no less variable in *P. stramineipennis* than they are in *P. murdava*, so we have not attempted to describe them.

♀. Differs from male in being larger, in the wings being paler, with the scanty setulose clothing at their bases greyish-fuscous paler than the ground in the hindwing, and in the spots of the forewing being larger, paler, and more angular; agrees therewith in the costal area of the hindwing being pale brown above.

Hab.—♂, Sikkim, Bhutan, Upper Assam, and Cachar; ♀, Sikkim.

Expanse: ♂, 1·8 to 2·0; ♀, 2·1 inches.

We have long known of the existence of two species of the genus *Pithauria* occurring in almost equal profusion in Sikkim and Bhutan, and we recently sent a male specimen of each to Mr. Moore to be named in order that we might know for certain to which the term *murdava* ought properly to be applied. Mr. Moore returned the dark one (which agrees with his figure in the Proc. Zool. Soc. Lond., 1878, pl. xlv, fig. 13) labelled "*P. murdava*, ♂", and the light one, our *P. stramineipennis*, "*P. murdava*, ♀." In describing *P. murdava*, he does not give the sex of the typical specimen, but his description, like his figure, applies best to the dark form. Mr. Distant appears to have fallen into the same error as Mr. Moore, correctly figuring as the male that which we have all along taken as the male of *P. murdava*, but describing the present species as its female.* We possess two specimens of the female of *P. murdava*, which differ from the single one of *P. stramineipennis*,

* *Pithauria murdava*, Distant, Rhop. Malay., p. 378, n. 1, *male* and *female* pl. xxxv, fig. 9, *male* (1886).

in having the darker wings richly purple-glossed, with the very scanty setulose clothing of their bases conforming in colour to that of the male, and in the costal area of the hindwing being concolorous with the rest of the organ, as in the male.

Expanse, 2·0 and 2·1 inches.

In our figure the downy clothing of the upperside of the wings at the base is not represented of a sufficiently light and bright shade; it is in reality of a clear bright whity-brown or straw-colour, which, being conspicuously contrasted with the dark margins, renders *P. stramineipennis* most readily distinguishable from *P. murdava*, in which the downy clothing is, as has already been stated, yellowish-olivaceous.

The genital armature, which has been carefully examined in several specimens of each species, though identical in general plan, yet differs greatly in detail in the two.

Some hundreds of specimens of each species have passed through our hands.

Two males, Silcuri and Irangmara, 30th June and 11th July.

235. Thanaos ? obsoleta.

T. obsoleta, Moore, Proc. Zool. Soc. Lond., 1878, p. 694.

One battered specimen only three-fourths of an inch in expanse at Silcuri, 21st June, and another in equally bad condition at Subong, 26th August.

236. Hyarotis adrastus.

Papilio adrastus, Cramer, Pap. Ex., vol. iv, pl. cccxix, figs. F, G (1780).

Thirty-nine examples of both sexes in forests around Silcuri, 25th May to 26th August.

237. Tagiades atticus, Pl. XVII, Fig. 10, ♀.

Hesperia atticus, Fabricius, Ent. Syst., vol. iii, pt. i, p. 339, n. 288 (1793).

One female, Subong, 29th August.

238. Tagiades obscurus, Pl. XVII, Fig. 9, ♀.

T. obscurrus, Mabille, Ann. Soc. Ent. France, fifth series, vol. vi, p. 274, n. 22 (1876).

One female, Silcuri, 29th May, agrees with examples so named by Mr. Moore.

239. Tagiades ravi.

Pterygospidea ravi, Moore, Proc. Zool. Soc. Lond., 1865, p. 779.

Twenty-one males and females in and around Silcuri, 25th May to 6th August.

240. Satarupa phisara, Pl. XVII, Fig. 4, ♂.

S. phisara, Moore, Journ. A. S. B., vol. liii, pt. 2, p. 50 (1884); *Satarupa bhagava ?* de Nicéville, Journ. A. S. B., vol. lii, pt. 2, p. 90, n. 39, *part* (1883).

♂. Upperside, *both wings* dark sooty-black, the *cilia* cinereous. *Forewing* with eight semitransparent spots and dots, five dots forming an S-shaped subapical series, a slightly transversely elongated spot near the posterior angle of the cell, a second about the same size but squarer below and beyond this near the base of the second median interspace, and a third more than four times the size of the other two taken together, notched at both ends, and placed about the middle of the length of the wing in the first median interspace. *Hindwing* with a narrow and indistinct submarginal band lighter than the ground, which is coarsely mottled between it and a broadish whity-brown subbasal band with irregular margins that extends from the middle of the costal only to the internal nervure. *Head* and *thorax* with their appendages coloured much as in *S. bhagava*, Moore; but the *abdomen* is black above, with the segments edged posteriorly with scales concolorous with the alar band, whereas in *S. bhagava* the subbasal band extends right to the abdominal margin of the wings and crosses the abdomen, of which it covers two complete segments. Underside, *both wings* marked as above.

Since the above was written this species has been described by Mr. Moore, to whom a Sikkim specimen had been sent by de Nicéville for comparison.

One male, Irangmara, 29th July.

241. Sarangesa dasahara.

Nisoniades dasahara, Moore, Proc. Zool. Soc. Lond., 1865, p. 787.

Five males, Silcuri and Silchar, 3rd April to 26th May.

242. Udaspes folus.

Papilio folus, Cramer, Pap. Ex., vol. i, pl. lxxiv, fig. F (1775).

Twenty-two specimens of both sexes, Silcuri and around, 6th April to 6th August.

243. Plesioneura alysos.

P. alysos, Moore, Proc. Zool. Soc. Lond., 1865, p. 789.

Six males, Irangmara, 8th to 28th July.

244. Plesioneura restricta, Pl. XVII, Fig. 5, ♂.

P. restricta, Moore, Lep. Cey., vol. i, p. 178 (1881).

One male, Silcuri, 16th, and another Sildubi, 28th June.

245. Plesioneura monteithi, n. sp., Pl. XVIII, Figs. 3, 3*a*, ♀.

♀. Upperside, *both wings* rich dark brown with a vinous tinge in some lights. *Forewing* with a semi-transparent white lustrous disca band of four completely-conjugated spots, the first large and oblong at the end of the cell; the second posterior and external to it at the base of the interspace between the second and third median nervules, and consequently wedge-shaped; the third conterminous with the first and second, forming an oblong figure whose opposite angles are subequal, and placed in the interspace between the first and second median nervules; and the fourth subpentagonal, double the size of the second, and half the size of the first and third, but not extending for more than two-thirds of the distance across the submedian area in which it is placed. *Hindwing* unmarked. Underside, *forewing* marked as above, but with the three subcostal streaks which connect the band with the costa much more distinct than above, where they are all but imperceptible; the lowest spot of the discal band much larger, reaching the submedian nervure, and outwardly diffused. *Cilia* concolorous with the wings.

Expanse: 1·7 inches.

Two females, Irangmara, 8th and 18th July. Closely allied to *P. feisthamelii*, Boisduval, from the Moluccas.

246. Coladenia andamanica.

Plesioneura dan, var. *andamanica*, Wood-Mason and de Nicéville, Journ. A. S. B., vol. l, pt. 2, p. 257, n. 118 (1881).

One specimen in forest near Silcuri, 8th August, which agrees best with this species, but differs in the discal golden band on the upperside of the forewing being slightly broader and the yellow spots on the underside of the hindwing obsolete. It agrees with the *P. dhanada* of Moore (Proc. Zool. Soc. Lond., 1865, p. 789, from Masuri in the Western Himalayas) in the golden band not nearly reaching the anal angle of the forewing on the upperside (thereby differing from *P.* (*Kerana* apud Distant) *aurivittata*, Moore, Proc. Zool. Soc. Lond., 1878, p. 843, pl. liii, fig. 2), departing from it in having the cilia cinereous throughout.

247. Coladenia dan.

Papilio dan, Fabricius, Mant. Ins., vol. ii, p. 88, n. 798 (1787).

Eleven specimens of both sexes from 22nd to 30th May.

248. Abaratha sura.

Achlyodes sura, Moore, Proc. Zool. Soc. Lond., 1865, p. 786.

Two males, Irangmara, 21st July and 2nd August.

We take this opportunity to give a more complete description of, and to figure twice the natural size from a Sikkim example, the striking little hesperid :—

249. Cyclopides subvittatus, Pl. XVII, Figs. 6, 6*a*, ♂.

C. subvittatus, Moore, Proc. Zool. Soc. Lond., 1878, p. 692.

♂,♀. Upperside, *both wings* iridescent vandyke-brown. *Forewing* with one, two, three, four, or five very small pure and bright chrome-yellow streaks divided by the veins placed obliquely beyond the end of the cell; or even immaculate; and with all the *cilia* lighter yellow than the spots when present, and broadly intersected with brown opposite to the ends of the veins. Underside, *both wings* and the bases of the *cilia* throughout rich vandyke-brown, darker than above, and veined and margined with rich chrome-yellow. *Forewing* with the costal margin to a little beyond its middle, the costal and subcostal nervures and nervules to the costal and outer margins, and the extremity of the third median nervule veined, and the outer margin bordered, with chrome-yellow, so that the wing may be described as being increasingly bordered from the base to the apex, and decreasingly from the apex to the submedian nervure with yellow streaked with dark brown. *Hindwing* yellow-bordered, with the yellow veins broadly edged on both sides with yellow. *Antennæ* dark brown, ringed and tipped with chrome-yellow. *Head*, *thorax*, and *abdomen* above dark vandyke-brown, below yellow.

Expanse : ·90 to ·95 inches.

Hab.—Sikkim, where it is not uncommon at low elevations; Bhutan; and Salween, Moulmein, whence the type specimens were received.

The great variation in the number of the small chrome-yellow spots on the upperside of the forewing presented by our specimens from Sikkim and Bhutan suggests at least the suspicion that the *C. subradiatus* of Moore (Proc. Zool. Soc. Lond., 1878, p. 693) from the Khasia Hills is not specifically distinct from the *C. subvittatus* of the same writer.

EXPLANATIONS OF THE PLATES.

Plate XV.

Fig. 1. *Enispe euthymius*, Doubleday, ♂.
Fig. 2. *Papilio nevilli*, W.-M., ♂.
Fig. 2*a*. ——— ——— W.-M., ♂.
Fig. 3. *Lehera skinneri*, W.-M. and de N., ♀.
Fig. 4. *Pithauriopsis aitchisoni*, W.-M. and de N., ♂.

Fig. 5. *Pithauria stramineipennis*, W.-M. and de N., ♂.
Fig. 6. *Catapœcilma elegans*, Druce, ♂.

PLATE XVI.

Fig. 1. *Mycalesis suaveolens*, W.-M. and de N., ♂.
Fig. 2. *Erites falcipennis*, W.-M. and de N., ♂.
Fig. 3. *Euthalia jama*, Felder, ♀.
Fig. 4. ——————— Felder, ♂.
Fig. 5. ——— – *jahnu*, Moore, ♀.
Fig. 6. *Athyma zeroca*, Moore, ♂.

PLATE XVII.

Fig. 1. *Telicota augias*, Linnæus, ♂.
Fig. 2. *Taractrocera mœvius*, Fabricius, ♀.
Fig. 3. *Isoteinon microstictum*, W.-M. and de N., ♂.
Fig. 3*a*. ——————————— W.-M. and de N., ♀.
Fig. 4. *Satarupa phisara*, Moore, ♂.
Fig. 5. *Plesioneura restricta*, Moore, ♂.
Fig. 6. *Cyclopides subvittatus*, Moore, ♂, × 2.
Fig. 6*a*. ——————————— Moore, ♂, × 2.
Fig. 7. *Parnara assamensis*, W.-M. and de N., ♀.
Fig. 7*a*. ——————— W.-M. and de N., ♀.
Fig. 8. *Halpe sikkima*, Moore, ♂.
Fig. 9. *Tagiades obscurus*, Mabille, ♀.
Fig. 10. ———-- *atticus*, Fabricius, ♀.
Fig. 11. *Nacaduba cœlestis*, de N., ♂.
Fig. 12. ———- *viola*, Moore, ♂.
Fig. 13. -——— *macrophthalma*, Felder, ♂.

PLATE XVIII.

Fig. 1. *Astictopterus subfasciatus*, Moore, ♂.
Fig. 1*a*. ——————— Moore, ♂.
Fig. 2. ——————— *olivascens*, Moore, ♀.
Fig. 2*a*. ——————— Moore, ♀.
Fig. 3. *Plesioneura monteithi*, W.-M. and de N., ♀.
Fig. 3*a*. ——————— W.-M. and de N., ♀.
Fig. 4. *Baracus septentrionum*, W.-M. and de N., ♂.
Fig. 4*a*. ——————— W.-M. and de N., ♂.
Fig. 5. *Parnara assamensis*, W.-M. and de N., ♂.
Fig. 5*a*. ——————— W.-M. and de N., ♂.
Fig. 6. ——— *eltola*, Hewitson, ♂.
Fig. 6*a*. ——————— Hewitson, ♂.
Fig. 7. ——— *ornata*, Felder, ♂.
Fig. 7*a*. ——————— Felder, ♂.
Fig. 8. *Hasora coulteri*, W.-M. and de N., ♂.
Fig. 8*a*. ——————— W.-M. and de N., ♀.
Fig. 8*b*. ——————— W.-M. and de N., ♀.